

1-6-1. Erp Lot 3 TEST**Test Purpose:**

To measure the power consumption

Configuration:

1. System Model: : NJ70CU - D+PVT
2. CPU: : CPU INTEL I7-10510U (1.8 GHZ, COMET LAKE U,QSBF, V0) 14NM
4C GT2 15W SMART CACHE=8MB QS BGA1528
(6-S03-10510-EF0)
3. Number of physical cores: : 4
4. M/B Version: : 6-71-NJ500-D03
5. Audio Board: : 6-71-NJ508-D02
6. Click Board: : 6-71-NJ502-D02
7. BIOS: : 1.07.05
8. EC: : 1.07.06
9. Driver: : 1.07.01
10. OS: : Win10 –RS6.
11. Hot-Key: : 3.0 V 1.45
12. K/B backlight(default): : ON
13. Driver (LPM)(default): : Enable
14. LCD: : LCD N17.3" FHD/WVA/N7/NON GT/EDP AU B173HAN04.2
(H/W:0A) (6-50-NBB35-G020)
15. HDD: : HDD SATA3 2.5" 7MM 5400RPM 1TB(1000GB) WD
WD10SPZX-XXZ10T0(XX=22 OR 00) (BLUE MN1000S)
(6-85-0241T-W00)
16. ODD: : SATA DVD WRITER 5 1/4" 8X 9.5MM GUD0N ROM VER 1.00 (WIN
10) HLDS (6-85-A088X-504)
17. NGFF PCIE: : SSD M.2 2280 512GB PHISON ESMP512GTB3C2-E12 (E12) PCIE
G3*4 3D TLC 64 LAYERS (6-85-D515B-H02) * 1Pcs.
18. Audio: : IC REALTEK ALC293D-CG AUDIO CODEC QFN-48
19. Main Battery: : BAT.P S LI 14.6V/2.8AH/41WH 4S1P SMP/LG (BQ30Z55)
980Q2246F/FB 2750MAH NJ50CU (6-87-NJ50S-41D00)
: BAT.P S LI 14.4V/2.2AH/31WH 4S1P SMP/SDI (BQ30Z55)
980T/Q2198F (TEXTURE) (2150MAH) N750BU
(6-87-N750S-31C00).
20. AC/DC Adapter: : AC ADAPTER 40W 19V 2.1A DC I/O M3P+2P CHICONY
(A13-040N3A) FOR DOE W510LU (6-51-W51L2-030)
: AC ADAPTER 40W 19V 2.1A DC I/O M3P+2P LITEON (PA-1400-76)
W510PU DOE+BIS (6-51-W51P2-010)
21. Platform Controller Hub: : Intel® Comet Lake U CPU Platform 15W.
22. VGA: : Intel® UHD Graphics 630
23. Video Card Dedicated
Non-Shared Memory (MB) : N/A.
24. K/B Controller: : IC IT5570E VER: CX EMBEDDED CONTROLLER KBC LQFP 128P
25. Keyboard: : KB FRAME US PC+ABS (COVESTRO FR3008) N150ZU
(6-42-N15Z2-0U0)
26. LAN Board: : IC LAN & CARD READER HOST CONTROLLER RTL8411B QFN
48P
27. RAM Module: : DDR4-2666 SO-DIMM 16GB/1024M*8, CL19 1.20V (SAMSUNG:
M471A2K43CB1-CTDXX) (CHIPS: SAMSUNG
K4A8G085WCBCTD) 260 PIN (6-76-0011C-K15) * 2 Pcs.
28. CMOS LI-ION Battery: : SOCKET G2 BAT. HOLDER FOR CR2032 (W5000102-001)(EPSON)

- 29. WLAN+BT Combo Card: : 250V AC/DC
: Intel Wireless-AX AX200 (Cyclone Peak 2) 2x2
802.11axAX200.NGWG.NVQ QS PCIe(MM:985886) non-Vpro (SPW0L3)
- 30. Video Camera: : UVC CAMERA CHICONY FIX(RGB) CNFIH3821003920LH 1M HD OV9734 N150ZU FWXXXX W/WHITE-LED W/2D-MIC(NARROW BORDER WITH FFC) (6-88-N15ZC-5100).
:
- 31. Touch Pad: : TOUCH PAD SYNAPTICS PTP TM-P3429 (108*61MM) (WHQL) N150ZU (6-49-N15Z3-011)
- 32. 3G/4G Card: : Huawei ME906s LTE M.2 Module *without GPS function (SPW700)
- 33. Card Reader: : IC LAN & CARD READER HOST CONTROLLER RTL8411B QFN 48P
- 34. Test Location: : PRODUCT DESIGN ASSURANCE LAB. (25~29°C, 50~60% R.H.)
- 35. Test Date: : 10/03 ~ 10/08 in 2019

Test Specification:

(EU) No 617/2013

Equipment:

Item	Equipment description	Equipment brand/ Model	Equipment serial no.	Last calibration date	Next calibration due date
1	Digital Power Meter	ITECH IT9121	00046203	May/14/2019	May/13/2020
2	AC Power Source	EEC 6620	00046184	May/14/2019	May/13/2020

Ambient Condition:

Room temperature : 26°C

Relative humidity: 56%

Test Laboratory:

CLEVO CO.

No. 129, HSING-TE ROAD, SUN CHUNG CITY 241, TAIPEI HSIEN, TAIWAN, R.O.C

Product Design Assurance, R&D Center.

Tested By	Review By
Billy	Allen
Test Date : 2019/10/03	Review Date : 2019/11/27

Specification:

1. Notebook Categories for TEC Criteria :

The following categories of notebook computer are define for the purposes of this Regulation :

Categories A : Notebook computer means a notebook computer that does not meet the definition of Categories B or Categories C notebook computer :

Categories B : Notebook computer means a notebook computer with at least one discrete graphics card (dGfx) :

Categories C : Notebook computer means a notebook computer with at least the following characteristics :

- a) A minimum two physical cores in the CPU;

- b) A minimum two 2 GB of system Memory; and
- c) A discrete graphics card (dGfx) meeting the G3 (with FB Data Wide > 128 bit), G4, G5, G6 or G7 classification;

2. Desktop Categories for TEC Criteria :

The following categories of desktop computer are define for the purposes of this Regulation :

Categories A : Desktop computer means a desktop computer that does not meet the definition of Categories B, Categories C or Categories D desktop computer :

Categories B : Desktop computer means a desktop computer with :

- a) Two physical cores within the CPU and
- b) A minimum two 2 GB of system Memory;.

Categories C : Desktop computer means a desktop computer with :

- a) Three or more physical cores within the CPU ; and
- b) A configuration of minimum of one of the following two characteristics :
- c) A minimum of 2 GB of system Memory; and/or
- d) A Discrete GPU.

Categories D : Desktop computer means a desktop computer with :

- a) A minimum 4 physical Cores in the CPU ; and
- b) A configuration of minimum of one of the following two characteristics :
- c) A minimum of 4 GB of system Memory; and/or
- d) A Discrete graphics card (dGfx) meeting the G3 (with FB Data Wide > 128 bit), G4, G5, G6 or G7 classification;

3. TEC (Desktop and Notebook product categories)

TEC will be determined using the formula below :

$$E_{TEC} = (8760/1000) * (P_{off} * T_{off} + P_{sleep} * T_{sleep} + P_{idle} * T_{idle})$$

Desktop:

$$E_{TEC} = (8760/1000) * (P_{off} * 0.55 + P_{sleep} * 0.05 + P_{idle} * 0.4)$$

Notebook:

$$E_{TEC} = (8760/1000) * (P_{off} * 0.6 + P_{sleep} * 0.1 + P_{idle} * 0.3)$$

4. ETEC Requirement :

	Desktop Computer (kWh)	Notebook Computer (kWh)
TEC (kWh)	Categories A : ≤ 94.0 Categories B : ≤ 112.0 Categories C : ≤ 134.0 Categories D : ≤ 150.0	Categories A : ≤ 27.0 Categories B : ≤ 36.0 Categories C : ≤ 60.5
Capability Adjustments		
Memory	1 kWh (per GB over base) Base Memory: Categories A, B and C : 2GB Categories D : 4GB	0.4 kWh (per GB over 4)
Additional Internal Storage	25 kWh	3 kWh
Discrete TV tuner	15 kWh	2.1 kWh
Discrete audio card	15 kWh	/
First discrete graphics card (dGfx)	G1 : 18 kWh	G1 : 7 kWh
	G2 : 30 kWh	G2 : 11 kWh
	G3 : 38 kWh	G3 : 13 kWh
	G4 : 54 kWh	G4 : 20 kWh
	G5 : 72 kWh	G5 : 27 kWh
	G6 : 90 kWh	G6 : 33 kWh
	G7 : 122 kWh	G7 : 61 kWh

Each additional discrete graphics card (dGfx)	G1 : 11 kWh	G1 : 4 kWh
	G2 : 17 kWh	G2 : 6 kWh
	G3 : 22 kWh	G3 : 8 kWh
	G4 : 32 kWh	G4 : 12 kWh
	G5 : 42 kWh	G5 : 16 kWh
	G6 : 53 kWh	G6 : 20 kWh
	G7 : 72 kWh	G7 : 36 kWh

Quantity: 1 set

S/N: NKNJ70CU0009I00002

Method/Condition:

1. Measure AC power consumption while AC source is 230V/50Hz
2. Lot 3 Test :
 - a) S3 Mode.
 - b) Power Off (S5)
 - c) Idle Mode.

Result:

AC ADAPTER 40W 19V 2.1A DC I/O M3P+2P LITEON (PA-1400-76)

Lowest Power State (Power OFF Mode)

Test Item	Result	SPEC	Judg.
	Power (W)		
S5 (230V / 50Hz)	0.340	≤ 0.5 W	Pass

OFF Mode (S5)

Test Item	Result	SPEC	Judg.
	Power (W)		
S5 (230V / 50Hz) WOL Disable	0.333	≤ 1.0 W	Pass
S5 (230V / 50Hz) WOL Enable	0.340	≤ 1.7 W	Pass

With an additional allowance of 0.7W for the WOL enable.

Sleep Mode

Test Item	Result	SPEC	Judg.
	Power (W)		
S3 (230V / 50Hz) WOL Disable	0.912	≤ 3.0 W (NB) ≤ 5.0 W (DT)	Pass
S3 (230V / 50Hz) WOL Enable	0.914	≤ 3.7 W (NB) ≤ 5.7 W (DT)	Pass

With an additional allowance of 0.7W for the WOL enable.

Idle Mode

Test Item	Result
	Power (W)
Idle (230V / 50Hz)	4.028

Activity is limited to those basic applications that the system starts by default.

ETEC

Condition	Test Result (kWh)		SPEC (kWh)	Judgment
1. CPU : Intel® Comet Lake I7-10510U 1.8GHz 15W 2. Memory : 32 GB 3. Number of Hard Driver : 1 PCS 4. BIOS/EC/Driver: 05/ 06 / 01	230V / 50Hz	13.173	38.2 (32GB) 27 (4GB)	Pass

Desktop:

$$ETEC = (8760/1000) * (P_{off} * 0.55 + P_{sleep} * 0.05 + P_{idle} * 0.4)$$

Notebook:

$$ETEC = (8760/1000) * (P_{off} * 0.6 + P_{sleep} * 0.1 + P_{idle} * 0.3)$$

Conclusion:

Test result was Pass.

Result:

AC ADAPTER 40W 19V 2.1A DC I/O M3P+2P CHICONY (A13-040N3A)

Lowest Power State (Power OFF Mode)

Test Item	Result	SPEC	Judg.
	Power (W)		
S5 (230V / 50Hz)	0.286	≤ 0.5 W	Pass

OFF Mode (S5)

Test Item	Result	SPEC	Judg.
	Power (W)		
S5 (230V / 50Hz) WOL Disable	0.281	≤ 1.0 W	Pass
S5 (230V / 50Hz) WOL Enable	0.286	≤ 1.7 W	Pass

With an additional allowance of 0.7W for the WOL enable.

Sleep Mode

Test Item	Result	SPEC	Judg.
	Power (W)		
S3 (230V / 50Hz) WOL Disable	0.805	≤ 3.0 W (NB) ≤ 5.0 W (DT)	Pass
S3 (230V / 50Hz) WOL Enable	0.807	≤ 3.7 W (NB) ≤ 5.7 W (DT)	Pass

With an additional allowance of 0.7W for the WOL enable.

Idle Mode

Test Item	Result
	Power (W)
Idle (230V / 50Hz)	3.792

Activity is limited to those basic applications that the system starts by default.

ETEC

Condition	Test Result (kWh)		SPEC (kWh)	Judgment
5. CPU : Intel® Comet Lake I7-10510U 1.8GHz 15W	230V / 50Hz	12.175	38.2 (32GB) 27 (4GB)	Pass
6. Memory : 32 GB				
7. Number of Hard Driver : 1 PCS				
8. BIOS/EC/Driver: 05/ 06 / 01				

Desktop:

$$ETEC = (8760/1000) * (P_{off} * 0.55 + P_{sleep} * 0.05 + P_{idle} * 0.4)$$

Notebook:

$$ETEC = (8760/1000) * (P_{off} * 0.6 + P_{sleep} * 0.1 + P_{idle} * 0.3)$$

Conclusion:

Test result was Pass.