TEST REPORT
COMMISSION REGULATION (EU) No 617/2013
of 26 June 2013
implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for computers and computer servers

Report Reference No. ..... :	LCS180731084AS
Tested by	Simple Zhang
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Checked by	Jason Huang
.....	Project Engineer
Approved by	Peter Chen
.....	Project Manager
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Testing Laboratory	
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Testing location / address ..... :	Same as above
Applicant's name ..... :	Microtech Srl
Address ..... :	Via Aldo Moro 9 - 20090 Buccinasco (MI) Italy
Manufacturer ..... :	Yibin Weiheng Digital Company Limited
Address ..... :	Building 23rd, NO.7, GangYuanWest, Lingang Economic and Technological Development Zone, YiBin, China
Test specification	
Standard ..... :	COMMISSION REGULATION (EU) No 617/2013, EN 50564: 2011
Test procedure ..... :	Compliance with COMMISSION REGULATION (EU) No 617/2013 and EN 50564: 2011
Non-standard test method..... :	N/A
Test item description ..... :	ultrabook
Trade Mark ..... :	Microtech
Model/Type reference ..... :	e-book pro N5000
Ratings ..... :	For Adapter: Input: 100V-240V~. 50/60Hz, 1.0A; Output: 12V⎓, 3A; For PC : Input: 12V⎓, 3A; Battery: 7.6V⎓, 5000mAh

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Possible test case verdicts

- test case does not apply to the test object ..... : N (N/A)
- test object does meet the requirement ..... : P (Pass)
- test object does not meet the requirement ..... : F (Fail)

Testing

Date of receipt of test item ..... : July,31, 2018

Date(s) of performance of tests ..... : July,31, 2018 to September,28, 2018

General remarks

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

List of Attachments (including a total number of pages in each attachment):

Attachment 1: Photos and Product label

Attachment 2: Equipment list

General Product Information

1. Ambient temperature 15 °C to 35 °C

Copy of marking plate

Microtech
ultrabook
Model: e-book pro N5000
Input: 12V⎓, 3A
Battery: 7.6V⎓, 5000mAh
Importer: XXXX
Address: XXXX

Yibin Weiheng Digital Company Limited
Made in China

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COMMISSION REGULATION (EU) No 617/2013 of 26 June 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for computers and computer servers ANNEX II Ecodesign requirements and timetable			
1. E_{TEC}			
Desktop computer, integrated desktop computer			
1.1.1	**From 1 July 2014**		N
1.1.2	The annual total energy consumption (E_{TEC} in kWh/year) shall not exceed: (a) Category A computer: 133,00; (b) Category B computer: 158,00; (c) Category C computer: 188,00; (d) Category D computer: 211,00. E_{TEC} shall be determined using the following formula: E_{TEC} = (8 760/1 000) × (0,55 × Poff + 0,05 × Psleep + 0,40 × Pidle). For computers that lack a discrete sleep mode, but have idle state power demand less than or equal to 10,00 W, power in idle state (P idle) may be used in place of sleep (P sleep) in the above equation, such that the formula is replaced by E_{TEC} = (8 760/1 000) × (0,55 × P off + 0,45 × P idle) All Px are power values in the indicated mode/state as defined in the definition section, measured in Watts (W) according to the procedures indicated in Annex III.		N
1.1.2	The following capability adjustments apply: (a) memory: 1 kWh/year per GB over base, where base memory is 2 GB (for category A, B and C computers) and 4 GB (for category D computers); (b) additional internal storage: 25 kWh/year; (c) discrete television tuner: 15 kWh/year; (d) discrete audio card: 15 kWh/year; (e) discrete graphics card (dGfx) for the first and each additional discrete graphics card (dGfx):		N

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		dGfx category	TEC allowance (kWh/year)		N
	First discrete graphics card (dGfx)	G1	34		
		G2	54		
		G3	69		
		G4	100		
		G5	133		
		G6	166		
		G7	225		
	Each additional discrete graphics card (dGfx)	G1	20		
		G2	32		
		G3	41		
		G4	59		
		G5	78		
		G6	98		
		G7	133		
1.1.3	The capability adjustments for discrete graphics cards (dGfx), discrete television tuner and discrete audio card mentioned in point 1.1.2 and point 1.2.2 only apply to cards and tuner that are enabled during testing of desktop computers or integrated computers.				N
1.1.4	Category D desktop computers and integrated desktop computers meeting all of the following technical parameters are exempt from the provisions specified in points 1.1.1 and 1.1.2 and their revisions specified in point 1.2: (a) a minimum of six physical cores in the central processing unit (CPU); and (b) discrete graphics card(s) (dGfx) providing total frame buffer bandwidths above 320 GB/s; and (c) a minimum 16 GB of system memory; and (d) a PSU with a rated output power of at least 1 000 W.				N
1.2	**From 1 January 2016**				N
1.2.1	The following revisions to the annual total energy consumption specified in point 1.1.1 apply: The annual total energy consumption (E TEC in kWh/year) shall not exceed: (a) Category A computer: 94,00; (b) Category B computer: 112,00; (c) Category C computer: 134,00; (d) Category D computer: 150,00.				N
1.2.2	The following revisions to the capability adjustments for discrete graphics cards (dGfx) specified in point 1.1.2(e) apply:				N

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		dGfx category	TEC allowance (kWh/year)		N
	First discrete graphics card (dGfx)	G1	18		
		G2	30		
		G3	38		
		G4	54		
		G5	72		
		G6	90		
		G7	122		
	Each additional discrete graphics card (dGfx)	G1	11		
		G2	17		
		G3	22		
		G4	32		
		G5	42		
		G6	53		
		G7	72		
Notebook computer					
1.3	**From 1 July 2014**				P
1.3.1	The annual total energy consumption (E_{TEC} in kWh/year) shall not exceed: (a) Category A computer: 36,00; (b) Category B computer: 48,00; (c) Category C computer: 80,50; E_{TEC} shall be determined using the following formula: E_{TEC} = (8 760/1 000) × (0,60 × Poff + 0,10 × Psleep + 0,30 × Pidle) where all P x are power values in the indicated mode/state as defined in the definition section, measured in Watts (W) according to the procedures indicated in Annex III.				P
1.3.2	The following capability adjustments apply: (a) memory: 0,4 kWh/year per GB over base, where base memory is 4 GB; (b) additional internal storage: 3 kWh/year; (c) discrete television tuner: 2,1 kWh/year; (d) discrete graphics card (dGfx) (for the first and each additional discrete graphics card (dGfx))				N

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		dGfx category	TEC allowance (kWh/year)		N
	First discrete graphics card (dGfx)	G1	12		
		G2	20		
		G3	26		
		G4	37		
		G5	49		
		G6	61		
		G7	113		
	Each additional discrete graphics card (dGfx)	G1	7		
		G2	12		
		G3	15		
		G4	22		
		G5	29		
		G6	36		
		G7	66		
1.3.3	The capability adjustments for discrete graphics cards (dGfx) and discrete television tuner mentioned in point 1.3.2 and point 1.4.2 only apply to cards and tuner that are enabled during testing of notebook computers.				N
1.3.4	Category C notebook computers meeting all of the following technical parameters are exempt from the provisions specified in points 1.3.1 and 1.3.2 and their revisions specified in point 1.4: (a) a minimum of four physical cores in the central processing unit (CPU); and (b) discrete graphics card(s) (dGfx) providing total frame buffer bandwidths above 225 GB/s; and (c) a minimum 16 GB of system memory.				N
1.4	**From 1 January 2016**				P
1.4.1	The following revisions to the annual total energy consumption specified in point 1.3.1 apply: The annual total energy consumption (E_{TEC} in kWh/year) shall not exceed: (a) Category A computer: 27.00; (b) Category B computer: 36.00; (c) Category C computer: 60.50;				P
1.4.2	The following revisions to the capability adjustments for discrete graphics cards (dGfx) specified in point 1.3.2(d) apply:				N

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		dGfx category	TEC allowance (kWh/year)		N
	First discrete graphics card (dGfx)	G1	7		
		G2	11		
		G3	13		
		G4	20		
		G5	27		
		G6	33		
		G7	61		
	Each additional discrete graphics card (dGfx)	G1	4		
		G2	6		
		G3	8		
		G4	12		
		G5	16		
		G6	20		
		G7	36		
2. SLEEP MODE					
Desktop computer, integrated desktop computer and notebook computer					
2	**From 1 July 2014**				P
2.1	A product shall provide sleep mode and/or another condition that provides the functionality of sleep mode and which does not exceed the applicable power demand requirements for a sleep mode.				P
2.2	Power demand in sleep mode shall not exceed 5,00 W in desktop computers and integrated desktop computers and 3,00 W in notebook computers.				P
2.3	Desktop computers and integrated desktop computers where idle state power demand is less than or equal to 10,00 W are not required to have a discrete system sleep mode.				N
2.4	Where a product is placed on the market with a WOL functionality enabled in sleep mode: (a) an additional allowance of 0,70 W can be applied; (b) it must be tested with a WOL functionality both enabled and disabled and must comply with both requirements.				N
2.5	Where a product is placed on the market without Ethernet capability, it shall be tested without WOL enabled.				N
3. LOWEST POWER STATE					
Desktop computer, integrated desktop computer and notebook computer					
3	**As of the entry into force of the Regulation**				P
3.1	Power demand in the lowest power state shall not exceed 0,50 W.				P
3.2	A product shall provide a power state or mode which does not exceed the applicable power demand requirements for the lowest power state when it is connected to the mains power source.				P

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3.3	Where a product is placed on the market with an information or status display, an additional allowance of 0,50 W can be applied.		P
4. OFF MODE			
Desktop computer, inte-grated desktop computer and notebook computer			
4	**From 1 July 2014**		P
4.1	Power demand in off mode shall not exceed 1,00 W.		P
4.2	A product shall provide off mode and/or another condition which does not exceed the applicable power demand requirements for off mode when it is connected to the mains power source.		P
4.3	Where a product is placed on the market with a WOL functionality enabled in off mode: (a) an additional allowance of 0,70 W can be applied; (b) it must be tested with a WOL functionality both enabled and disabled and must comply with both requirements.		N
4.4	Where a product is placed on the market without Ethernet capability, it shall be tested without WOL enabled.		N
5. INTERNAL POWER SUPPLY EFFICIENCY			
Desktop computer, integrated desktop computer, desktop thin client, workstation, and small- scale server			
5.1	**From 1 July 2014** All computer internal power supplies shall not perform at less than: (a) 85 % efficiency at 50 % of rated output power; (b) 82 % efficiency at 20 % and 100 % of rated output power; (c) power factor = 0,9 at 100 % of rated output power. Internal power supplies with a maximum rated output power of less than 75 W are exempt from the power factor requirement.	Powered by external power supply	N
Computer servers			
5.2	**From 1 July 2014**	Powered by external power supply	N
5.2.1	All multi-output (AC-DC) power supplies shall not perform at less than: (a) 85 % efficiency at 50 % of rated output; (b) 82 % efficiency at 20 % and 100 % of rated output.		N
5.2.2	All multi-output (AC-DC) power supplies shall not perform at less than: (a) power factor 0,8 at 20 % of rated output; (b) power factor 0,9 at 50 % of rated output; (c) power factor 0,95 at 100 % of rated output.		N
5.2.3	All single output (AC-DC) power supplies with rated output of not more than 500 W shall not perform at less than: (a) 70 % efficiency at 10 % of rated output; (b) 82 % efficiency at 20 % of rated output; (c) 89 % efficiency at 50 % of rated output; (d) 85 % efficiency at 100 % of rated output.		N

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5.2.4	All single output (AC-DC) power supplies with rated output of not more than 500 W shall not perform at less than: (a) power factor 0,8 at 20 % of rated output; (b) power factor 0,9 at 50 % of rated output; (c) power factor 0,95 at 100 % of rated output.		N
5.2.5	All single output (AC-DC) power supplies with rated output greater than 500 W but not more than 1 000 W shall not perform at less than: (a) 75 % efficiency at 10 % of rated output; (b) 85 % efficiency at 20 % and 100 % of rated output; (c) 89 % efficiency at 50 % of rated output.		N
5.2.6	All single output (AC-DC) power supplies with rated output greater than 500 W but not more than 1 000 W shall not perform at less than: (a) power factor 0,65 at 10 % of rated output; (b) power factor 0,8 at 20 % of rated output; (c) power factor 0,9 at 50 % of rated output; (d) power factor 0,95 at 100 % of rated output.		N
5.2.7	All single output (AC-DC) power supplies with rated output of more than 1 000 W shall not perform at less than: (a) 80 % efficiency at 10 % of rated output; (b) 88 % efficiency at 20 % and 100 % of rated output; (c) 92 % efficiency at 50 % of rated output.		N
5.2.8	All single output (AC-DC) power supplies with rated output of more than 1 000 W shall not perform at less than: (a) power factor 0,8 at 10 % of rated output; (b) power factor 0,9 at 20 % of rated output; (c) power factor 0,9 at 50 % of rated output; (d) power factor 0,95 at 100 % of rated output.		N
6. POWER MANAGEMENT ENABLING			
Desktop computer, inte-grated desktop computer and notebook computer			
6.1	**As of the entry into force of the Regulation** The computer shall offer a power management function, or a similar function which, when the computer is not providing the main function or when other energy-using products are not dependent on its functions, automatically switches the computer into a power mode that has a lower power demand than the applicable power demand requirement for sleep mode.		P
6.2.	**From 1 July 2014**		P
6.2.1.	The computer shall reduce the speed of any active 1 Gigabit per second (Gb/s) Ethernet network links when transitioning to sleep or off-with-WOL mode.		N
6.2.2.	When in sleep mode, the response to ‘wake events’, such as those via network connections or user interface devices, should happen with a latency of ≤ 5 seconds from the initiation of a wake event to the system becoming fully usable including rendering of display.		N

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6.2.3.	The computer shall be placed on the market with the display sleep mode set to activate within 10 minutes of user inactivity.		P
6.2.4.	A computer with Ethernet capability shall have the ability to enable and disable a WOL function, if available, for sleep mode. A computer with Ethernet capability shall have the ability to enable and disable WOL for off mode if WOL from off mode is supported.		N
6.2.5.	Where a distinct sleep mode or another condition that provides sleep mode func-tionality exists, the mode shall be set to activate within 30 minutes of user inactivity. This power management function shall be activated before placing the product on the market.		P
6.2.6.	Users shall be able to easily activate and deactivate any wireless network connec-tion(s) and users shall be given a clear indication with a symbol, light or equivalent, when wireless network connection(s) have been activated or deactivated.		P
7. INFORMATION TO BE PROVIDED BY MANUFACTURERS			
Desktop computer, integrated desktop computer, and notebook computer			
7.1	From 1 July 2014		P
7.1.1	Manufacturers shall provide in the technical documentation and make publicly available on free-access websites the following information:	See below	P
	(a) product type and category as defined in Article 2 (one and only one category);	CATEGORY A	-
	(b) manufacturer's name, registered trade name or registered trade mark, and the address at which they can be contacted;	See manufacturer on Page 1	-
	(c) product model number;	See Page 1	-
	(d) year of manufacture;		-
	(e) E_{TEC} value (kWh) and capability adjustments applied when all discrete graphics cards (dGfx) are disabled and if the system is tested with switchable graphics mode with UMA driving the display;		-
	(f) E_{TEC} value (kWh) and capability adjustments applied when all discrete graphics cards (dGfx) are enabled;		-
	(g) idle state power demand (Watts);		-
	(i) sleep mode with WOL enabled power demand (Watts) (where enabled);	without WOL function	-
	(j) off mode power demand (Watts);		-
	(k) off mode with WOL enabled power demand (Watts) (where enabled);	without WOL function	-
	(l) internal power supply efficiency at 10 %, 20 %, 50 % and 100 % of rated output power;	Powered by EPS	-
	(m) external power supply efficiency;	ERP stage 2	-
	(n) noise levels (the declared A-weighted sound power level) of the computer;	0	-
	(o) the minimum number of loading cycles that the batteries can withstand (applies only to notebook computers);	⩾300 times	-
	(p) the measurement methodology used to determine information mentioned in points (e) to (o);	EN 50564:2011	-
	(q) sequence of steps for achieving a stable condition with respect to power demand;	Wait 10 minutes	-

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	(r) description of how sleep and/or off mode was selected or programmed;	See manual	-
	(s) sequence of events required to reach the mode where the equipment automatically changes to sleep and/or off mode;	Time selected by user	-
	(t) the duration of idle state condition before the computer automatically reaches sleep mode, or another condition which does not exceed the applicable power demand requirements for sleep mode;	Selected by user	-
	(u) the length of time after a period of user inactivity in which the computer automatically reaches a power mode that has a lower power demand requirement than sleep mode;	Selected by user	-
	(v) the length of time before the display sleep mode is set to activate after user inactivity;	Selected by user	-
	(w) user information on the energy-saving potential of power management functionality;	See manual	-
	(x) user information on how to enable the power management functionality;	See manual	-
	(y) for products with an integrated display containing mercury, the total content of mercury as X,X mg;		-
	(z) test parameters for measurements:	See below	-
	— test voltage in V and frequency in Hz,	230.3V, 50Hz	-
	— total harmonic distortion of the electricity supply system		-
	— information and documentation on the instrumentation, set-up and circuits used for electrical testing.	See equipment list	-
7.1.2	If a product model is placed on the market in multiple configurations the product information required under point 7.1.1 may be reported once per product category (as defined in Article 2), for the highest power-demanding configuration available within that product category. A list of all model configurations that are represented by the model for which the information is reported shall be included in the in-formation provided.		P
Notebook computer			
7.2	**From 1 July 2014** If a notebook computer is operated by battery/ies that cannot be accessed and replaced by a non-professional user, in addition to the information specified in point 7.1, manufacturers shall provide in the technical documentation, and make available on free-access websites and on the external packaging of the notebook computer, the following information ‘The battery[ies] in this product cannot be easily replaced by users themselves’. The information provided on the external packaging of the notebook computer shall be clearly visible and legible and it shall be provided in all the official languages of the country where the product is marketed.		P
Workstation, mobile workstation, desktop thin client, small-scale server and computer server			
7.3	**From 1 July 2014**		N

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7.3.1	Manufacturers shall provide in the technical documentation and make publicly avail-able on free-access websites the following information: (a) product type as defined in Article 2 (one and only one category); (b) manufacturer's name, registered trade name or registered trade mark, and the address at which they can be contacted; (c) product model number; (d) year of manufacture; (e) internal/external power supply efficiency;		N
	(f) test parameters for measurements: — test voltage in V and frequency in Hz, — total harmonic distortion of the electricity supply system, — information and documentation on the instrumentation, set-up and circuits used for electrical testing. (g) maximum power (Watts); (h) idle state power (Watts); (i) sleep mode power (Watts); (j) off mode power (Watts); (k) noise levels (the declared A-weighted sound power level of the computer; (l) the measurement methodology used to determine information mentioned in points (e) to (k).		N
7.3.2	If a product model is placed on the market in multiple configurations the product information required under point 7.3.1 may be reported once per product category (as defined in Article 2), for the highest power-demanding configuration available within that product category. A list of all model configurations that are represented by the model for which the information is reported shall be included in the in-formation provided.		N

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Appliance Details		
Model No.	e-book pro N4000	
Electrical Ratings	Voltage, Vdc:	12
	Current ☒A ☐mA:	3
	Frequency, Hz:	N/A
	Power, Watts:	N/A
External Power Supply (EPS):	☒ Yes ☐ No	
Electrical Ratings of the EPS:	100-240V~, 50/60Hz, 1.0A	

Product Type	☐ Desktop Computers	☐ Category A: not meet Category B, C or D ☐ Category B: 2 physical cores and at least 2GB system memory ☐ Category C: at least 3 physical cores and (at least 2GB system memory and/or a discrete graphics card (dGfx)) ☐ Category D: at least 4 physical cores and (at least 4GB system memory and/or a discrete graphics card (dGfx) meeting G3)
	☐ Integrated Desktop Computer	☐ Category A: not meet Category B, C or D ☐ Category B: 2 physical cores and at least 2GB system memory ☐ Category C: at least 3 physical cores and (at least 2GB system memory and/or a discrete graphics card (dGfx)) ☐ Category D: at least 4 physical cores and (at least 4GB system memory and/or a discrete graphics card (dGfx) meeting G3)
	☒ Notebook Computer	☒ Category A: not meet Category B, C or D ☐ Category B: at least a discrete graphics card (dGfx) ☐ Category C: at least 2 physical cores and at least 2GB system memory and at least a discrete graphics card (dgfx))
	☐ Desktop Thin Clients	
	☐ Workstations	
	☐ Mobile Workstations	
	☐ Small-Scale Servers	
	☐ Computer Servers	

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Environment	
Supply Voltage: (V)	230
Supply Frequency: (Hz)	50
Measured ac Mains Voltage: (V)	230.3
Measured ac Mains Frequency: (Hz)	50
Ambient Temperature: (℃)	25.6
Relative Humidity: (%)	51.4
THD: (%)	1.468
Air Speed Close to the UUT: (m/s)	0.1

Energy-Efficiency data and Results	
Sleep Mode Power (P_{sleep}) (W)	1.335
Limit of Maximum Sleep Mode Power (W) (From 1 July 2014)	3.00 (Notebook category A computer without WOL functionality)
Off Mode Power (P_{off}) (W)	0.883
Limit of Maximum Off Mode Power (W) (From 1 July 2014):	1.00 (Notebook category A computer without WOL functionality)
Lowest Power (W)	0.029
Limit of Maximum Lowest Power (W): (As of the entry into force of the regulation)	0.53
Idle state power demand (Watts)	5.344
E_{TEC} (kWh/year)	20.01
Limit of Maximum E_{TEC} (W) (From 1 July 2014):	36.00
Limit of Maximum E_{TEC} (W) (From 1 January 2016):	27.00
Result	PASS
Note: E_{TEC} = (8 830/1 000) × (0.60 × Poff + 0.10 × Psleep + 0.30 × Pidle)	

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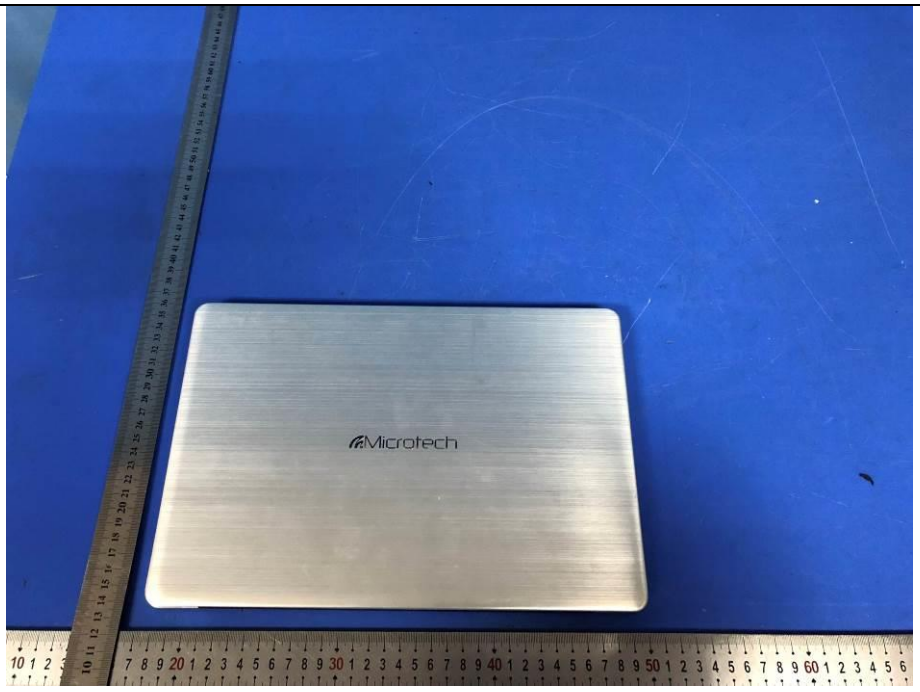
Attachment 1: PHOTO DOCUMENTS

Details of: Overview 1

Details of: External View 1



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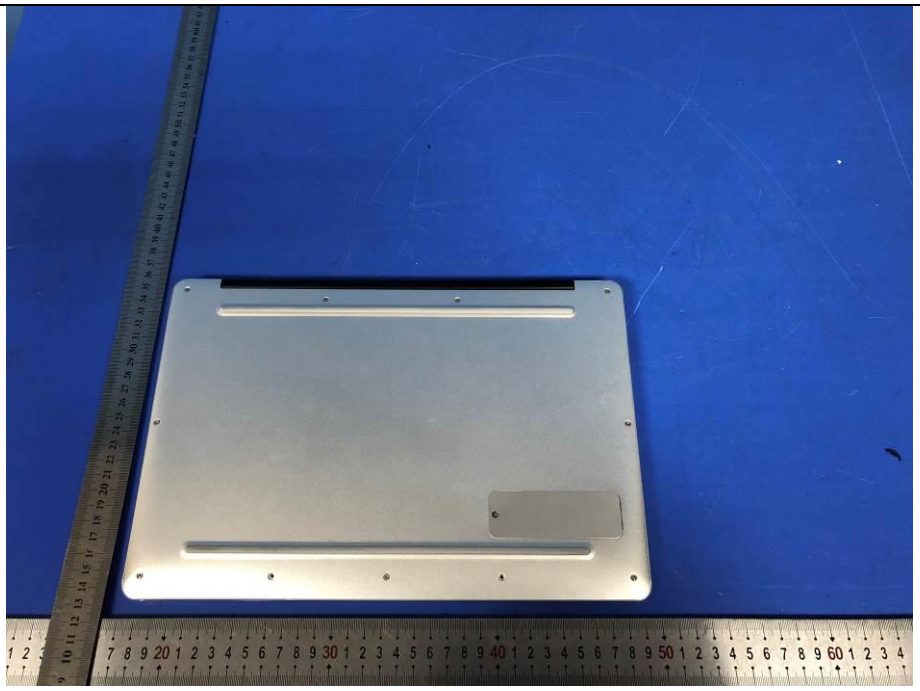
Attachment 1: PHOTO DOCUMENTS

Details of: External View 2



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ATTACHMENT 2: EQUIPMENT LIST

Instrument Code	Instrument Type	Manufacturer	Model	Range Used	Calibration Date / Calibration Due Date
LCS-S-117	Digital Power Meter	YOKOGAWA	WT310	0-600Vac, 0-20A, 0-6000W	2017/08/18 / 2018/08/17
LCS-S-056	Digital multimeter	FLUKE	15B+	0~1000Vdc,0~10A, 0~20MΩ, 700Vac	2017/10/11 / 2018/10/10
LCS-S-029	Stop watch	TIANFU	PC396	0.01s-24h	2017/10/12 / 2018/10/11
LCS-S-122	Anemometer	SMART SENSOR	AR866A	0-30m/s	2018/05/08 / 2019/05/07
LCS-S-038	Audio signal generator	LONGWEI	TAG-101	Output Voltage:5Vrms; Frequency range:10Hz-1Mhz	2017/10/12 / 2018/10/11
LCS-S-015	Temperature & Humidity recorder	SHANGHAI	ZJ1-2B	45—35°C, 30～100%RH	2017/10/17 / 2018/10/16

--- END OF TEST REPORT ---

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