REV.	Description	Date
00	SPEC ISSUE (NEW MODEL)	02/08/2023
01	102A-232120 ITEM 1.2.6.3 Over Current Protection +20VDC @ 96W profile, change min to 4.81A, change max to 5.1A (for non-DELL 96W profile)	02/17/2023
02	102A-233081 1. ITEM 1.1.1 Nominal Voltage Vin voltage range Typ, change from 120/240V to 100-240V. (for 安規要求 ES 要對齊 label) 2. ITEM 1.1.3 Rated Frequency Vin frequency,Typ change from 50/60Hz to 50-60Hz. (for 安規要求 ES 要對齊 label) 3. ITEM 2.3.9 Common mode noise Change to "The peak to peak voltage measured in the frequency range of 80 KHz to 400 KHz shall not exceed 150 mVpp". (for 對齊 DELL EE SPEC)	03/13/2023
03	102A-233137 Update ITEM 2.3.9 Common mode noise: 1. The peak to peak voltage measured in the frequency range of 10 KHz to 40 KHz shall not exceed 500 mVpp. 2. The peak to peak voltage measured in the frequency range of 40 KHz to 80 KHz shall not exceed 150 mVpp. 3. The peak to peak voltage measured in the frequency range of 80 KHz to 400 KHz shall not exceed 150 mVpp. (follow 附件 EE SPEC)	03/17/23
04	102A-239049 ADD MODEL: ADP-130GB BA9G	09/11’23
05	102A-23A125 ADD MODEL: ADP-130GB BA1B	10/27’23
06	102A-23C201 ADD MODEL: ADP-130GB BA9N	12/20’23
07	102A-241154 ADD MODEL: ADP-130GB BA9F	01/15’24
08	102A-242019 1. Item 1.2.6.3 +20VDC@96W profile: Min 4.81A Max 5.15A	02/05’24
09	102A-243237 ADD MODEL: ADP-130GB BA88	03/27’24

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台達電子工業股份有限公司
DELTA ELECTRONICS, INC.

DESCRIPTION :
電氣規格 (Electrical Specification)

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DELTA ELECTRONICS, INC. AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SELL OF APPARATUSES OR DEVICES WITHOUT PERMISSION.

MODEL NO. :
ADP-130GB B SERIES

Date	Drawn	Design (EE)	Design (ME)	DOCUMENT NAME. :	REV.
03/27’24	蘇雲巧	陳嘉佑	曾映澍	ES-130GB B SERIES	09

MODEL LIST

ADP-130GB BA	ADP-130GB BA9G	ADP-130GB BA1B	ADP-130GB BA9N
ADP-130GB BA9F	ADP-130GB BA88		

1. ELECTRICAL

1.1 Input Characteristics:

1.1.1 Nominal Voltage

Parameter Description	Min	Typ	Max	Units
Vin (Voltage Range)	**90**	**100-240**	**264**	**Vrms**

1.1.2 Input Voltage Range

Parameter Description	Min	Typ	Max	Units
Vin (Voltage Range)	90		264	Vrms

1.1.3 Rated Frequency

Parameter Description	Min	Typ	Max	Units
Vin (frequency)	**47**	**50-60**	**63**	**Hz**

1.1.4 Frequency Range

Parameter Description	Min	Typ	Max	Units
Vin (frequency)	47		63	Hz

1.1.5 Current

Parameter Description	Min	Typ	Max	Units
Iin (90VAC)			TBD	Arms
Iin (180VAC)			TBD	Arms
Rated Input current on label		TBD		Arms

1.1.6 Brown out

Parameter Description	Min	Typ	Max	Units
Vin (turn-off)	40			Vrms

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1.1.7 Inrush Current Limit (cold start)

Parameter Description	Min	Typ	Max	Units
Initial In-rush Current			150	Amps (peak)

At 115V/230V. Spec shown is for First power up (Cold). Repeat (Warmp) power ups may be higher. Use a 100m-ohm input line impedence to represent a typical home/office line impedance on test set up. The design may NOT need to have an Inrush imiting NTC or any bypass mechanism. Worst case measurement (90/270 deg) is expected to be taken and I2T analysis conducted on Fuse and Bridge diode.

1.1.8 No Load and small load Power Consumption

Vin=**115V/230Vac**

Parameter Description	Min	Typ	Max	Units
Minimum Efficiency @ Vin=minimum, max load (+20V), @100V	87			%
Minimum Efficiency @ .1W, +20VDC	TBD			%
Minimum Efficiency @ .2W, +20VDC	TBD			%
Minimum Efficiency @ .25W, +20VDC	52			%
Minimum Efficiency @ .3W, +20VDC	TBD			%
Minimum Efficiency @ .4W, +20VDC	TBD			%
Minimum Efficiency @ .5W, +20VDC	53			%
Minimum Efficiency @ 1W, +20VDC	59			%
Minimum Efficiency @ 2W, +20VDC	65			%
Minimum Efficiency @ 5W, +20VDC	70			%
Minimum Efficiency @ 10W, +20VDC	75			%
Minimum Efficiency @ 15W, +20VDC	80			%
Minimum Efficiency @ 20W, +20VDC	82			%
Minimum Efficiency @ .25W, +5VDC	55			%
Max input power @ no load, +5VDC			100	mW

1.1.9 Average efficiency

Parameter Description	Min	Typ	Max	Units
Minimum average efficiency (25%, 50%, 75%, and 100%), +5VDC	81.39			%
Minimum average efficiency (25%, 50%, 75%, and 100%), +9VDC	86.62			%
Minimum average efficiency (25%, 50%, 75%, and 100%), +15VDC	87.73			%
Minimum average efficiency (25%, 50%, 75%, and 100%), +20VDC	89			%

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1.1.10 Power factor Correction ：

Parameter Description	Min	Typ	Max	Units
PFC @ 100% loasding and 115/230VAC	0.90			60Hz
PFC @ 20% loading and 115/230VAC	N/A			60Hz

1.2 Output Characteristics:

Parameter Description	Min	Typ	Max	Units
Output Voltage Regulation				
+5VDC	4.75	5.0	5.5	Volts
+9VDC	8.55	9.0	9.45	Volts
+15VDC	14.25	15.0	15.75	Volts
+20VDC	19.00	20.00	21.00	Volts
Output Current				
+5VDC	0		3	Amps
+9VDC	0		3	Amps
+15VDC	0		3	Amps
+20VDC	0		6.5	Amps

1.2.1 Peak Current

Parameter Description	Min	Typ	Max	Units
Transient Load Current @min Vout 18V	6.5		13	Amps
Maximum duration	0.1			ms

1.2.2 Output Ripple and Noise

Parameter Description	Min	Typ	Max	Units
Output ripple / noise				
+20VDC			350	mVpp
+15VDC			350	mVpp
+9VDC			300	mVpp
+5VDC			200	mVpp

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Measured methods:

T1. Performed by 20M Hz bandwidth in oscilloscope.

T2. Applied 0.1uF ceramic capacitor and 10uF tantalum capacitor across output connector terminals.

T3. Measured at the end of DC cable.

1.2.3 Acoustic noise

The sound quality of the Adapter shall meet all of the following criteria (metrics) for both left and right ear binaural measurements when tested in accordance with the Dell AC Adapter Sound Quality Test Procedure Document. For more complete specification refer to latest revision of Dell document AC0101 (Sound quality specification for AC Adapters)

Sound Quality Specifications for all Operational Modes

AC Adapter			
Operational Mode	**Critical Band Loudness**	**Prominent Tones**	**Modulation**
All Modes	**<0.025**	**No**	**<25%**

The Adapter must meet the specification at all test voltage/current combinations.

- Critical Band Loudness shall **be less than 25 millisone**s. This is not the sum total of the area under the curve rather this metric applies to each critical band along the Bark scale.
- No Prominent Tones **(Prominence Rati**o) allowed **(< 7.0 d**B) at any critical band.
- Degree of Amplitude Modulation in percentage shall **be less than 25%** in any critical band.

When testing Adapters for noise compliance, **all combinations of voltage and current will be use**d. Worst case for both input voltage ranges using all possible load currents should be documented. The Adapter must meet the specification at all test voltage/current combinations. The minimum number of finished product to be tested shall be 32 units. Out of the 32, two units should be tested for all the necessary Load/Line combinations to identify at least the two worst conditions for each input voltage range. These shall be tested at each individual stage of development. Additionally, in order to be in compliance with this specification the supplier shall pass 100% of all samples tested.

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All testing for compliance to this specification shall be performed in an acoustic lab certified by Dell.

All other results for compliance to this specification shall not be accepted.

Pendec Acoustic Laboratory

4F, No. 388, Section 1, Nei Hu Rd.

Taipei, Taiwan R. O. C. 114

Contact: Mr. Robin Cheng

886-2-2657-1779

0928269919 (Cellular)

1.2.4 Timing

Parameter Description	Min	Typ	Max	Units
T1(Output Turn On Delay) 5V only			4000	ms
T2 (Output Rise Time) 5V only			275	ms

1.2.5 Fall time

DC output fall time from 90% to 10% of output voltage shall be between **0~400ms** at 90VAC and maximum load.

Discharge time 20V→5V <275ms for no load and full load.

1.2.6 Protection

1.2.6.1 Over Voltage Protection (Non pre-short test item due to system limit and 100Vac test)

Parameter Description	Min	Typ	Max	Units
Output Over Voltage				Volts
+20VDC	22.0		26.0	Volts
+15VDC	17.0		20.0	Volts
+9VDC	11.0		15.0	Volts
+5VDC	5.8		8.0	Volts

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1.2.6.2 Short Circuit protection(Non pre-short test item due to system limit)

1. When any pin shorting on the cc pin, The AC adapter cannot be damaged. It is still able to keep functionality after removing pin shorting.
2. When Vo shorting on the GND, the AC adapter cannot be damaged. It can be auto-recovery (less 15 times). If the Vo to GND keep shorting after auto-recovery, the AC adapter must be latch.

1.2.6.3 Over Current Protection(+20VDC Min:3.1A)

When AC adapter output over current, it must be latch after delay time.

Parameter Description	Min	Typ	Max	Units
Over Current Inception Level				
+20VDC @ 96W profile	4.81		5.15	DELL request auto trim
+20VDC @ 130W profile	8		10.5	DELL request auto trim
+15VDC	3.5		5.5	Amps
+9VDC	3.5		5.5	Amps
+5VDC	3.5		5.5	Amps
Over Current Time Delay				
td	30	300		ms

1.2.6.4 Over Thermal Protection

The adapter shall use electronic circuitry to limit the unit case temperature **95℃** maximum. It return to normal operation only after AC power line recycles.

1.2.7 Dynamic Load Chang (50Hz,100Hz,1Khz)

Parameter Description	Min	Typ	Max	Units
Transient Loading Conditions				
+20VDC capacitive loading	100			uF
Output Transient Starting Load				
+20VDC	0			Amps
Output Transient Load Step				
+20VDC			100	% of max loading
Voltage Overshoot				
+20VDC			1.5	V
Voltage Undershoot				
+20VDC			1.5	V
Transient Response Load Slew Rate			2.5	A/usec

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Transient Loading Conditions				
+15VDC capacitive loading	100			uF
Output Transient Starting Load				
+15VDC	0			Amps
Output Transient Load Step				
+15VDC			100	% of max loading
Voltage Overshoot				
+15VDC			1.25	V
Voltage Undershoot				
+15VDC			1.25	V
Transient Response Load Slew Rate			2.5	A/usec
Transient Loading Conditions				
+9VDC capacitive loading	100			uF
Output Transient Starting Load				
+9VDC	0			Amps
Output Transient Load Step				
+9VDC			50	% of max loading
Voltage Overshoot				
+9VDC			0.95	V
Voltage Undershoot				
+9VDC			0.95	V
Transient Response Load Slew Rate			2.5	A/usec
Transient Loading Conditions				
+5VDC capacitive loading	100			uF
Output Transient Starting Load				
+5VDC	0			Amps
Output Transient Load Step				
+5VDC			50	% of max loading
Voltage Overshoot				
+5VDC			1	V
Voltage Undershoot				
+5VDC			0.75	V
Transient Response Load Slew Rate			0.2	A/usec

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1.2.8 Overshoot and undershoot

Parameter Description	Min	Typ	Max	Units
Voltage Overshoot				
+20VDC			21.5	Volts
+15VDC			16.5	Volts
+9VDC			9.9	Volts
+5VDC			5.6	Volts

1.2.9 System Capacitive Load

Parameter Description	Min	Typ	Max	Units
CapacitiveLoad				
+5VDC,+9VDC,+15VDC,+20VDC			100	uF
ESR Load				
+5VDC,+9VDC,+15VDC,+20VDC	30			m-ohms

2. Environmental

2.1 Temperature(safety demand)

Parameter Description	Min	Typ	Max	Units
Operating Temperature (in operation)	0		35	degrees Celsius
Non-Operating Ambient	-40		70	degrees Celsius
Max Case Temperature Rise 100Vac @ 25degC ambient			Side: Δ T≤ 43 Top: Δ T≤ 50 Bottom: Δ T≤ 60	degrees Celsius

2.2 Humidity

Parameter Description	Min	Typ	Max	Units
Humidity (Operating and NonOperating)			95	% non-condensing

2.3 Altitude

Parameter Description	Min	Typ	Max	Units
Altitude Operating			5,000	meter
Altitude Non-operating			35,000	feet

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ITEM	CONDITION	SPECIFICATION
Environmental Characteristics:		
2.3.1 Electric Fast Transients:	Refer to IEC1000- 4-4 level 3	No function error No damage
2.3.2 Lightning Surge:	Refer to IEC1000-4-5 level 3	No function error No damage
2.3.3 Electron Static Discharge: (Refer to IEC1000-4-2 Energy Storage Capacitor 150pF; Discharge Resistor 330Ω)	Air Discharge: ± 12kV min. Air Discharge: ± 15kV min Contact Discharge: ±6kV min. Contact Discharge: ±8kV min	No function error No damage No function error No damage
2.3.4 Cooling	Natural air cooling	
2.3.5 EMI:	CISPR 32: CLASS B	Under 2db with resistive load
2.3.6 Leakage Current	264Vac/50Hz Add DELL NFPA99	≤50 uA Meet safety(follow DELL demand test form)
2.3.7 Insulation Resistance:	Between AC input and secondary applied 500Vdc for 1 minute Add DELL HJ741 Primary to Earth (Ground)	≥ 30MΩ
2.3.8 Dielectric Strength: (Hi-Pot)	Between AC input and secondary AC 3kV, test time 1 minute, and cut off current shall be less than 10mA Hi-pot1 AC 3kV, test time 1s. Hi-pot2 DC 4242V, test time 1s. In production line Hi-pot arcing sense level=5	

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2.3.9 Common mode noise

1. The peak to peak voltage measured in the frequency range of 10 KHz to 40 KHz shall not exceed 500 mVpp.
2. The peak to peak voltage measured in the frequency range of 40 KHz to 80 KHz shall not exceed 150 mVpp.
3. The peak to peak voltage measured in the frequency range of 80 KHz to 400 KHz shall not exceed 150 mVpp.

2.3.10 RFI and EMI:

Test setup label down for DELL logo up
Primary follow Delta LAB confirm ,若不符合內規，以 DELL 3rd party 進行判斷

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3. Safety

1.1 The Power supply shall be designed to comply with EN/IEC 62368-1 and IEC 60950-1 safety requirements

Mechanical characteristics

<table>
<tr><th colspan="2">Item</th><th colspan="6">Conditions</th><th>Specification</th></tr>
<tr><td rowspan="4">1.</td><td rowspan="4">Bending test</td><td></td><td>Load</td><td>Angle (θ)</td><td>Arbitrary direction</td><td>Cycles in every minute</td><td>Sample size</td><td rowspan="4">Failure Criteria:
1. Any voltage that falls below 18.5V. Must be repeatable.
2. Any structural cracks, breaks, or tearing in the cable. No Exposed Metal.
3. Minor cosmetic damage is acceptable.</td></tr>
<tr><td>Case - DC cord</td><td>227 g</td><td>0~180°</td><td>6250 Cycles</td><td>15 Cycles</td><td>24 Pcs</td></tr>
<tr><td>DC Cord-Plug</td><td>227 g</td><td>0~180°</td><td>6250 Cycles</td><td>15 Cycles</td><td>24 Pcs</td></tr>
<tr><td colspan="6">Test Procedure:

1. Adjust the tester to count for 6250 cycles with a rate of 15 cycles per minute. Timing is listed below:
a. 0 – 180 degrees: 1.5 second, Dwell at 180 degrees: 1 second
b. 180 – 0 degrees: 1.5 second, Dwell at 0 degrees: 0 second
2. Rotate each direction 180 degrees. One cycle is 180 degrees.
3. Connect the monitoring systems (monitoring event <=5sec) to record the voltage during test.
4. Connect the 19.5V voltage source through the Adapter for Power, PSID, and GRD.
5. PSU rated current to be applied to Power and GRD, with minimum of 1A applied to PSID. Deviation to be approved by Dell.
6. Voltage across all three lines (PSID, GRD, Power) must be continuously monitored continuously and test equipment must be programmed to stop when the voltage drops below 18.5V.</td></tr>
</table>

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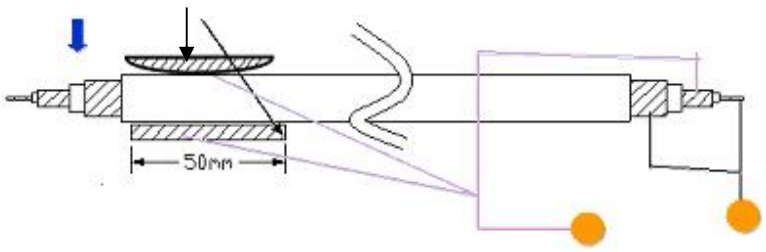
2.	Compression Test	For coaxial design, the positive of multimeter is connected to center conductor and the outer spiral conductor, and the negative is connected to inner spiral conductor and fixtures. For flat cable, each wire V+, GND, and PSID must be checked independently for shorting with each other under pressure. The material of the fixtures is stainless and it is a curved fixture, its thickness is 5 mm; length is 50 mm (See the figure). Compress speed is 1 ±.1 Kg/min. Sample size:12 Pcs  	Failure Criteria The cable should not short with pressure less than 100 Kg.
3.	Vibration	Only endurance conditioning by sweeping shall be made. The entire frequency range from 10 Hz to 55 Hz and return to 10 Hz. shall be transversed in 1 min. Amplitude（total excursion）: 1.5 mm This motion shall be applied for a period of 2 hrs in each of 3 mutually perpendicular axis （a total of 6 hrs）.	Output voltage refer to Item 1.2 Dielectric strength：Without ignition smoke, damage, arcing or breakdown. Insulation resistance ：100MΩ or more Appearance：There shall be no blistering of the specification label or other damage to the construction.
4.	Shock	Peak acceleration: 981/m/s^2 Duration of pulse: 6 ms Three successive shocks shall be applied in both directions of mutually perpendicular axis (a total of 18 shocks).	Output voltage ± 0.5V Dielectric strength：Without ignition smoke, damage, arcing or breakdown. Insulation resistance：100MΩ or more.

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<table>
<tr><td></td><td></td><td></td><td>Appearance：There shall be no blistering of the specification label or other damage to the construction.</td></tr>
<tr><td rowspan="3">4-1</td><td rowspan="3">Random Vibration (Non-Operational)</td><td rowspan="3">The random spectrum will be 3.08Grms.
Perform random vibration testing on three (3) mutually orthogonal axes.
Each vibration test will run for 30 minutes.
Random Vibration Breakpoints:
<table><tr><th colspan="2">PSD Break Points for 3.08Grms</th></tr><tr><td>Frequency (Hz)</td><td>Acceleration (G^2/Hz)</td></tr><tr><td>7</td><td>0.004</td></tr><tr><td>20</td><td>0.013</td></tr><tr><td>33</td><td>0.003</td></tr><tr><td>156</td><td>0.1</td></tr><tr><td>200</td><td>0.026</td></tr><tr><td>233</td><td>0.04</td></tr><tr><td>282</td><td>0.0037</td></tr><tr><td>312</td><td>0.01</td></tr><tr><td>400</td><td>0.0002</td></tr><tr><td>500</td><td>0.0002</td></tr><tr><td>600</td><td>0.00009</td></tr><tr><td>700</td><td>0.000023</td></tr><tr><td>800</td><td>0.00003</td></tr></table></td><td>The voltage delta between pretest and posttest voltages shall not exceed 5%.</td></tr>
<tr><td>The function must be ok and no any solder crack be found.</td></tr>
<tr><td>All parts and glue must be no damage and movement.</td></tr>
<tr><td>4-2</td><td>Random Vibration (Operational)</td><td>The random spectrum will be 2.17Grms.
Perform random vibration testing on three (3) mutually orthogonal axes.
Each vibration test will run for 30 minutes.
A meter will be reading the voltage throughout testing.
The voltage will remain within the 5% allowance during testing.
Random Vibration Breakpoints:</td><td>The voltage delta between pretest and posttest voltages shall not exceed 5%.
The function must be ok and no any solder crack be found.</td></tr>
</table>

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		PSD Break Points for 2.17Grms Frequency (Hz) / Acceleration (G^2/Hz) 7 / 0.001 21 / 0.007 32 / 0.0027 53 / 0.03 80 / 0.005 155 / 0.04 190 / 0.01 204 / 0.017 234 / 0.006 260 / 0.013 600 / 0.0005 700 / 0.0005 800 / 0.00015	All parts and glue must be no damage and movement.
5.	Drop test 1	Delta Drop Test Standard for Portable Power Supply Test height：1 meter for every surface (six sides) 1 times Test surface material：hardwood surface or concrete	1. Electrical characteristic shall be satisfied. 2. PWB 銅箔無掀起或傷害 3. 無銲錫破損 4. 無零件破損 5. 若測試造成外殼(Enclosure)裂縫,必須 Repeat test 5 times. 並進行 root cause analysis and provide corrective action. 6. 測試 Hi-pot 為"PASS"時,產品若有破洞, 裂縫時需檢查 User accessible area 與 Hazardous voltage parts,必須 keep Double or Reinforced insulation.
	Drop test 2	Drop times: 120 times for every surface (six side),total 720 times". Test surface material : The concrete Drop height: 10cm	

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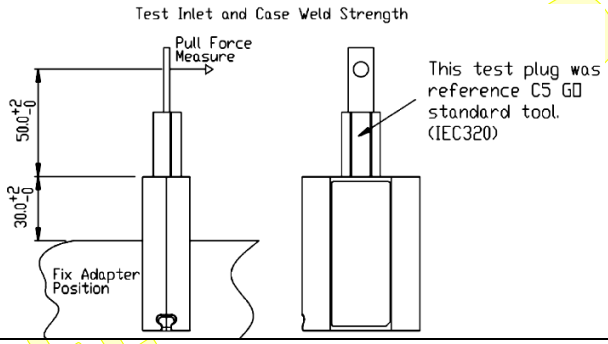
6.	AC inlet insertion and withdrawal	DENAN-LAW：Rated load 5000 times, and rated load 1.5 folds/100 times (20 times/min.) UL/CSA：Rated load 1.5 folds/250 times (10 times/min) IEC：Rated load 1000 times, and without rated load 3000 times (15 times/min.)	Without distinct damage in appearance. Electrical characteristic shall be satisfied.
7.	AC inlet insertion and withdrawal Push Test	The AC Power Cord receptacle shall remain securely mounted/fixed in place when a 20lb force is applied during insertion/ withdrawal of power cord. Test shall be repeated on each sample 50 times.(Sample size: 5 Pcs)	Without distinct damage in appearance.
8.	AC inlet weight test	The plug shall be connected to AC inlet then direction of plug X and Y shall be applied to there condition. Weight: 100 N. Time: 5 sec. Test times: 3 times.	Without distinct damage in appearance. Electrical characteristic shall be satisfied without solder crack of mounted board on AC inlet
8-1	AC inlet Bending Force test	1. Adapter is fixed by fixture and body of adapter extends 30mm from fixture. 2. The test inlet was reference C5 GO standard tool. 3. The distance between load point and inlet surface is 50mm. 4. We issue this test for both logo and label side. 5. Minimum bending force is 15 Kgf 	We stop pull force immediately when we hear break voice. We test each side once time for 5 pcs sample to take data.

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9.	Ball impact	Delta Impact Test Standard for Portable Power Supply 1 The sample is placed on the laminated wood surface with the surface to be impacted positioned horizontally. If the sample needs to be stabilized or held in place, the stabilizing device must be solid to allow for the intended force to be delivered to the sample. For example, if blocks are used to support the samples, the blocks shall be secured together so that the sample sits securely and doesn't move due to the impact delivered by the steel ball. The sample must be in contact with the laminated wood surface at all times. 2 The steel ball is allowed to fall freely from rest through the guide tube for a vertical distance of 1.3M to the point of impact. 3 Only one impact per sample shall be made. Use new samples for additional impacts.	1. 若測試造成外殼 (Enclosure) 裂縫,必須 Repeat test 5 times. 並進行 root cause analysis and provide corrective action. 2. 測試 Hi-pot 為"PASS"時,產品若有破洞,裂縫時需檢查 User accessible area 與 Hazardous voltage parts,必須 keep Double or Reinforced insulation.
10.	Acoustic Noise	Measurements to determine the AC adapter sound pressure are made using a 1/2" low noise free-field microphone in a inner size with 45(W)×45(D)×65(H) cm^3 Anechoic chamber.	Delta Spec.: The AC Adapter shall produce no human perceivable audible noise (less then 35dB) No load：< 35dB 0~Full Load:： 35dB
		Measurements to determine the AC Adapter sound quality are made using a binaural (artificial) head in a qualified chamber that meets the requirements of ISO 3744, Clause 4.3.	Dell Spec.: Please kindly refer to DELL AC Adapter Sound Quality Test Procedure (Number: AC0103) "AC Adapters Sound Quality Test Procedur
11.	Adhesion of specification labels	1. Tape peeling test 2. High temperature storage The AC adaptor shall be stored at a temperature of 65 ± 2℃ with relative humidity of 90% to 95% for 6 to 7 h 3. Low temperature storage The d. c. power supply shall be stored at a temperature of -20 ± 3℃ for 6 to 7 h.	There shall be no blistering or peeling of the specification label.

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12.	Wiggle test	1. Fasten adapter and cord firmly to their plates. 2. Adjust motor cam shaft so that AC adapter is in max forward position. 3. Connect cord to AC power and adapter output cable to DC load with LED to indicate that power is on. 4. Adjust plate distance so that adapter and cord just make connection and LED is lit. 5. Adjust DC load to maximum load for adapter (65W adapter = 3.75A). 6. Let adapter thermally soak for 15-20 minutes. 7. Adjust Variac to ~30VAC (~750RPM) and run for ~10 minutes. 8. Adjust Variac to ~0VAC and adjust motor cam shaft so that AC adapter is in max forward position. 9. Adjust plate distance so that adapter and cord just make connection and LED is lit. 10. Repeat steps 7 through 9 until adapter receptacle contacts begin to produce audible arcing noises. 11. Repeat steps 6 through 9 except lower Variac operational voltage to ~20VAC (~300RPM) until adapter begins to produce consistently Long or loud popping and arcing noises. 12. Remove adapter and plug from plates and attempt to manually twist cord slightly while varying the insertion distance, attempting to produce prolonged arcing, If manual manipulation should begin to prove unproductive, return to fixture and repeat step 11. 13. There is a "test to failure" pass criteria. This means continue to execute this test procedure until the adapter no longer conducts or the test ends in smoke or melting.	1. 如過程中有發煙,熔毀,停止後將樣品外殼拆開, 觀察 SOCKET 後方如果 Pin 铆接處沒有晃動, 可判定為 ”PASS”, 如 SOCKET 後方零件有被燒毀的現象,則判定為” FAIL” 2. 請注意卯接處發黑不是指塑膠熔毀後,覆蓋於卯接處的現象
13	Outline dimension Case Color	128*55.3*22.3 ; GRAY	L x W x H Color
14	Weight	300 g +/-25g	XX g
15	AC Inlet	C6	C6 or C8 or C14 or CX Type
16	DC Connector	USB Type C	X Type O.D. x I.D. x L
17	DC Cable Length	1800	XXXX mm

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18. Product Application: Notebook

19. DC Cable Connector pin define and related test request, please refer to SN item 2.4

USB C TYPE		TERMINAL
NA	V+ID RED	RED
PIN A4 A9	V BUS	WHITE (+)
PIN B4 B9		
PIN A5	CC1	ID BLUE
PIN A1 A12	GND	BLACK (-)
PIN B1 B12		
SHELL		
PIN A6 A7 SHORT	NC	

20. Product Ingress protection (IP) rating: Not requirement

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