REV.	Description	Date
00	SPEC ISSUE (Modify from ADP-65JH HBAC)	08/07’15

台達電子工業股份有限公司
DELTA ELECTRONICS, INC.

DESCRIPTION :
電氣規格 (Electrical Specification)

MODEL NO. :
ADP-65JH HBAJ

Date	Drawn	Design (EE)	Design (ME)	DOCUMENT NAME. :	REV.
08/07’15	王玉玲	柯祈佑	楊基祥	ES-65JH HBAJ	00

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1. ELECTRICAL

1.1 Input Characteristics:

1.1.1 Nominal Voltage

It is normal for **100 ~ 240Vac** input AC voltage.

1.1.2 Input Voltage Range

The Adapter shall operate from **90 ~ 264Vac**.

1.1.3 Rated Frequency

It is normal for **50Hz** or **60Hz** and single phase.

1.1.4 Frequency Range

The Adapter shall operate with an input frequency from **47 Hz** to **63 Hz**.

1.1.5 Input Current

1.5A Max at **100Vac** input voltage.

1.1.6 Inrush Current Limit (cold start)

No damage; meet fuse and bridge diode I^2t de-rating specified

1.1.7 Efficiency

1.1.7.1 **84 %** min. at nominal input voltage, maximum load and measured at the end of DC cable.

1.1.7.2 Active mode efficiency:

More than **87**% of average efficiency of **25%,50%,75%** and **100%** load tested at **115Vac** and **230**Vac. (Warm up after 30 minutes)

1.1.8 No Load Power Consumption

Maximum non-load power consumption is less than **0.3W** at **115Vac/60Hz and 230Vac/50HZ**

1.1.9 Small Load Power Consumption

Vin=100Vac/50Hz and 100Vac/60Hz and 115Vac/60Hz and 230Vac/50Hz

Output load(W)	Input power (max)
0.25W	0.5W
0.5W	1.0W
1.0W	1.7W
1.5W	2.4W
11.5W	14W
18W	22W

1.2 Output Characteristics:

1.2.1 Rated Voltage

The rated output voltage is specified at **19V**.

1.2.2 Voltage Range

The output voltage will be performed **18.05V~ 19.95V** when the load is **0A ~ 3.42A** steadily.

1.2.3 Current

This Adapter can work from **0A** to **3.42A** and output voltage is in section 1.2.2 specified range.

1.2.4 Output Ripple and Noise

Output ripple voltage is **300 mV** peak to peak or less.

Measured methods:

T1. Performed by **20M** Hz bandwidth in oscilloscope.

T2. Applied **0.1uF** high frequency capacitor and **47uF** electrolytic capacitor across output connector terminals.

T3. Measured at the end of DC cable.

1.2.5 Turn On delay time

The Adapter shall switch on in less than **2 seconds** at input voltage is 100Vac and 240Vac

1.2.6 Hold –up time

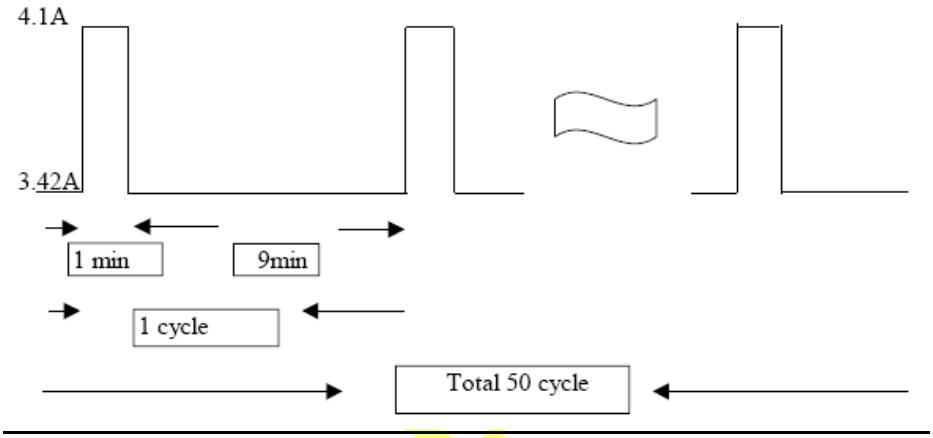
The output voltage shall be sustained **5mS** within regulation requirement after loss 100Vac and maximum load.

1.2.7 Rise time

DC output rise time from 10% to 90% of output voltage shall be less than **100ms** at nominal line and maximum load

1.2.8 Surge load:

A :

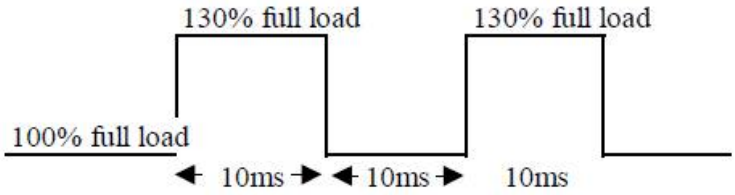


The adapter shall support a surge load with 120% of maximum load for 1min **,** maximun load for 9min and Output Voltage more than 18.05V at input voltage is 100-240Vac

B :

The adapter shall support a surge load with 130% of maximum load for 10ms ,
maximum load for 10ms and Output Voltage more than 18.05V at input voltage is 100-240Vac.

If the adapter operate in surge load mode and burn-in more than 30min , it might be OTP trigger and shutdown .



1.2.9 Load transient response

The adapter must within regulation when applied a step load from 0.1A to 100% load at **2.5A/us** slew rate and frequency is 10Hz to 10KHz

The output voltage will be performed **18.05V~ 19.95V.**

1.2.10 Over-shoot

The output overshoot shall be less than **19.95V**

1.2.11 Protection

1.2.11.1 Over Voltage Protection

The output shall be protected to latch off at over-voltage condition, maximum value can't be over **27V .** That might be return to normal state by AC reset . .

1.2.11.2 Over Current Protection

The maximum constant current shall be more than 4.1A . The adapter shall be Autorecovery . That might be return to normal state by AC reset .

1.2.11.3 Short Circuit protection

Output can be shorted without damage. The adaptor shall be Autorecovery . That might be return to normal state by AC reset . .

1.2.11.4 Over Temperature Protection

No deformation and no discoloration on case and will be shut down.

That might be return to normal state by AC reset

1.2.12 Capacitance load

Plugging a 1000uF capacitance to a live adapter, adapter can not shut down.

2. Environmental

2.1 Temperature

2.1.1 Operating

The AC Adapter shall be capable of operating at full load with an ambient temperature range of **0** ℃ **to +40**℃.

2.1.2 Shipping/Storage

The AC Adapter shall be capable of withstanding ambient temperature from **-30**℃ **to +80**℃.

2.2 Humidity

2.2.1 Operating

The AC Adapter shall be capable of operation in relative humidity of **8% to 90%** relative humidity, non-condensing.

2.2.2 Shipping/storage

The AC Adapter shall be capable of withstanding ambient relative humidity of **5% to 95%** relative humidity, non-condensing.

2.3 Immunity

2.3.1 Lightning Surge Immunity

This is to follow the norm of IEC-61000-4-5 Level 3 requirements

L-N +/-1KV/1.2＊ 50uS 5 times No function error.

L-FG +/-2KV/1.2＊ 50uS 5 times No damage.

2.3.2 Electric Fast Transients (EFT)

This is to follow the norm of IEC-61000-4-4/1995

(EN 61000-4-4) Level 2(1KV) requirements

2.4 Electrostatic Discharge (ESD)

This Adapter is capable to withstand ESD test voltage at any point around the enclosure as below.
(Refer to IEC61000-4-2)
±15KV air discharge No damage.
±8KV contact discharge No damage.

2.5 Surface Temperature rise

A :

Output 65W and ambient **25**℃;input voltage Input: 100Vac/ 50Hz; 240Vdc/ 50Hz Iout=3.42A
case temperature rise≦**45**℃

B :

Output 65W and ambient **25**℃;input voltage Input: 90Vac/ 50Hz; 264Vdc/ 50Hz Iout=3.42A
case temperature rise≦**50**℃

2.6 Dielectric Withstand Voltage (HI – POT)

Between AC input and secondary AC 3KV test time 1 minute; 100% of line products of this Adapter shall be applied 3000Vac for 2 seconds between AC input terminals and output terminals. Cut off current 10mA.

2.7 Leakage Current :

The AC leakage current is less than **50 μA** when adapter is connected to **240Vac/50Hz** at normal condition

2.8 Insulation Resistance

The insulation resistance shall be not less than **30M** ohms after application of **500Vdc/10mA for 1 second**.

2.9 Electromagnetic Interference (EMI)

2.9.1 The adapter shall comply with the following national standards.

(a) CISPR 22 Class B

(b) VCCI Class B

(c) FCC

2.10 MTBF

2.10.1 MTBF(Mean-Time-Between-Failures)Calculation

The calculated MTBF shall be **100,000** hours of continuous operation at **25**℃, maximum load and normal voltage.

3. Mechanical

3.1 Outline Dimension: 108.0 * 46.0 * 29.5 mm, color: Black

3.2 AC Inlet Type: Socket C6 type

3.3 DC Cable, UL1571 #AWG18, 1800mm

3.4 DC Connector Dimension:

MODEL NAME	O.D.	I.D.	PLUG LENGTH
ADP-65JH HBAJ	5.5 mm	2.5 mm	12.0 mm