# Product
# Engineering Specification

## Acer Elite 19 2.4G Combo

DOCUMENT NO. : DS2F-2CRXX01

MODEL NO. : KB:KBRFCR, MS:MORFLDO,

Dongle:MORFHPUOA-D

REVISION NO. : V8



Yongfa.Luo/Ken.Xu
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CHECK: Chris.Chou/Tonny.Cai/Sarah.Lee DATE: 2019-01-14

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| Rev. # | Date | Originated or Modified by | Description |
|---|---|---|---|
| V1 | 2018/11/10 | Jacky.Chu/Yandong.Ding/Yongfa.luo/Ken.Xu | First release. |
| V2 | 2019/01/14 | Jacky.Chu/Yandong.Ding/Yongfa.luo/Ken.Xu | 1. Update PID<br>2. Update matrix |
| V3 | 2019/01/17 | Jacky.Chu/Yandong.Ding/Yongfa.luo/Ken.Xu | Update key switch spec |
| V4 | 2019/5/28 | Kate.Meng | Updated KB,MS Fcc label |
| V5 | 2019/12/9 | Kate.Meng | Add Arabic/French language |
| V6 | 2020/6/9 | Kate Meng | Updated all labels' version number from 00 to 01 |
| V7 | 2020/6/17 | Kate Meng | Add Czech/Hebrew language |
| V8 | 2020/8/24 | Kate Meng | Add 1pc of RF 2.4G Flyer |
| | | | |
| | | | |

# Table of contents

# 1 Product Description

## 1.1 Introduction

- This document contains a functional and performance specification of Acer Elite Wireless K+M+D.

## 1.2 Feature Description

### 1.2.1 Mouse

- Wireless Technology — PixArt PAW3702 2.4GHz Radio Frequency
- Wireless Operating Range — more than 10m
- Battery — 1 AA alkaline battery
- Compatibility — ,Win7, Win8.1,Win10
- When battery voltage ≤ 1.0V Mouse will be shut down
- Button — L&R buttons, Wheel button (3-button Type)
- Tracking Sensor — PAW 3702 optical sensor
- Tracking Resolution — 1600 DPI

### 1.2.2 Dongle

- Wireless Technology — PixArt PAR4201 2.4GHz Radio Frequency
- Wireless Operating Range — more than 10m
- System interface — USB port only
- Operating channel: — 70 CH
- Compatibility — USB specification Revision 1.1 or greater

### 1.2.3 Anti-Interference 2.4Ghz Radio Frequency

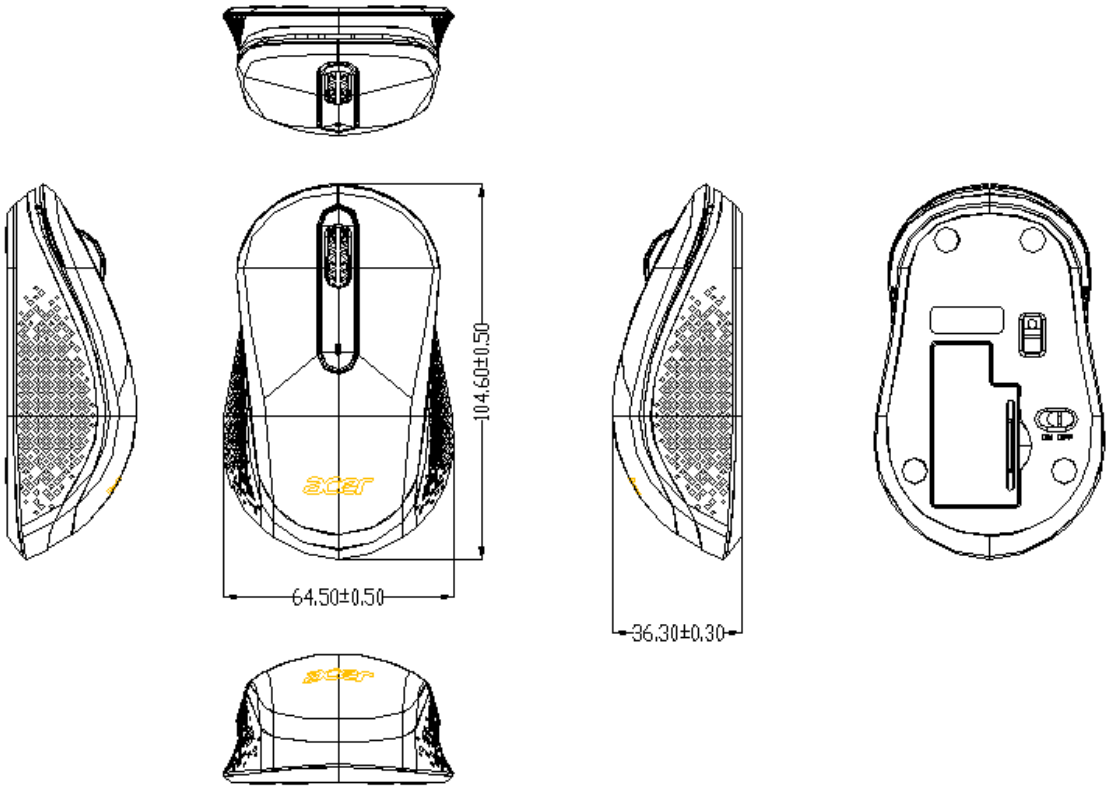
- The multi-channel architecture along with auto channel switch capability will be also required to guarantee the hassle-free 2.4GHz wireless connection.

# 2 Physical Specification

## 2.1 Dimension

MOUSE PART:

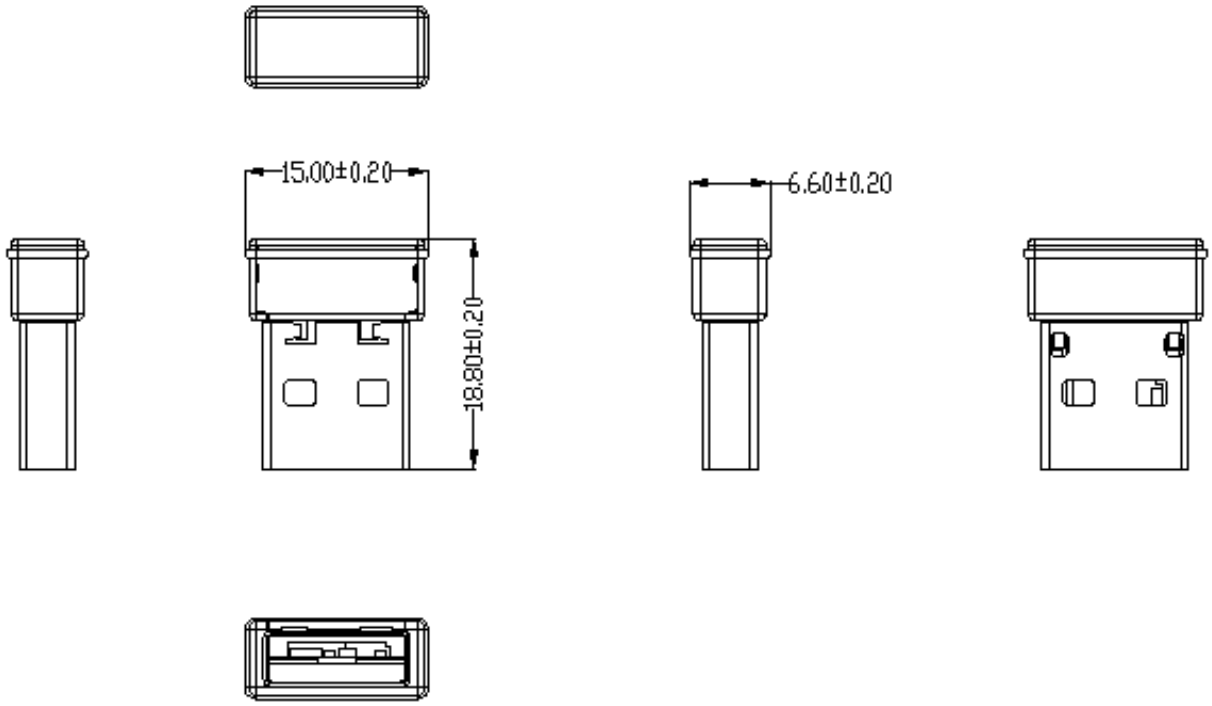
- Height 36.30±0.30mm
- Width 64.50±0.50mm
- Length 104.60±0.50mm




| | |
|---|---|
| Key | ABS Black |
| Scroll Wheel | PC High gloss, Black |
| Top Cover | ABS Black |
| Battery cover | ABS Black |
| Bottom Cover | ABS Black |
| Deco Ring | ABS Black/Silver |
| Foot Pad | Teflon Matte Black |

DONGLE PART:

Length: 18.8±0.20mm
Width: 15.00±0.20mm
Height: 6.60±0.1mm




PCB

- Material: FR1
- Flammability: UL 94V0

### 2.2 Weight

- Mouse unit:58.5+/-10g (Without battery)
- Dongle unit:1.75+/-0.5g.

### 2.3 Enclosure

- **Mouse PART**
- ABS
- **DONGLE PART**
- ABS

### 2.4 Food Pad

- **Mouse PART**
- Teflon

## 3 Mechanical Specifications

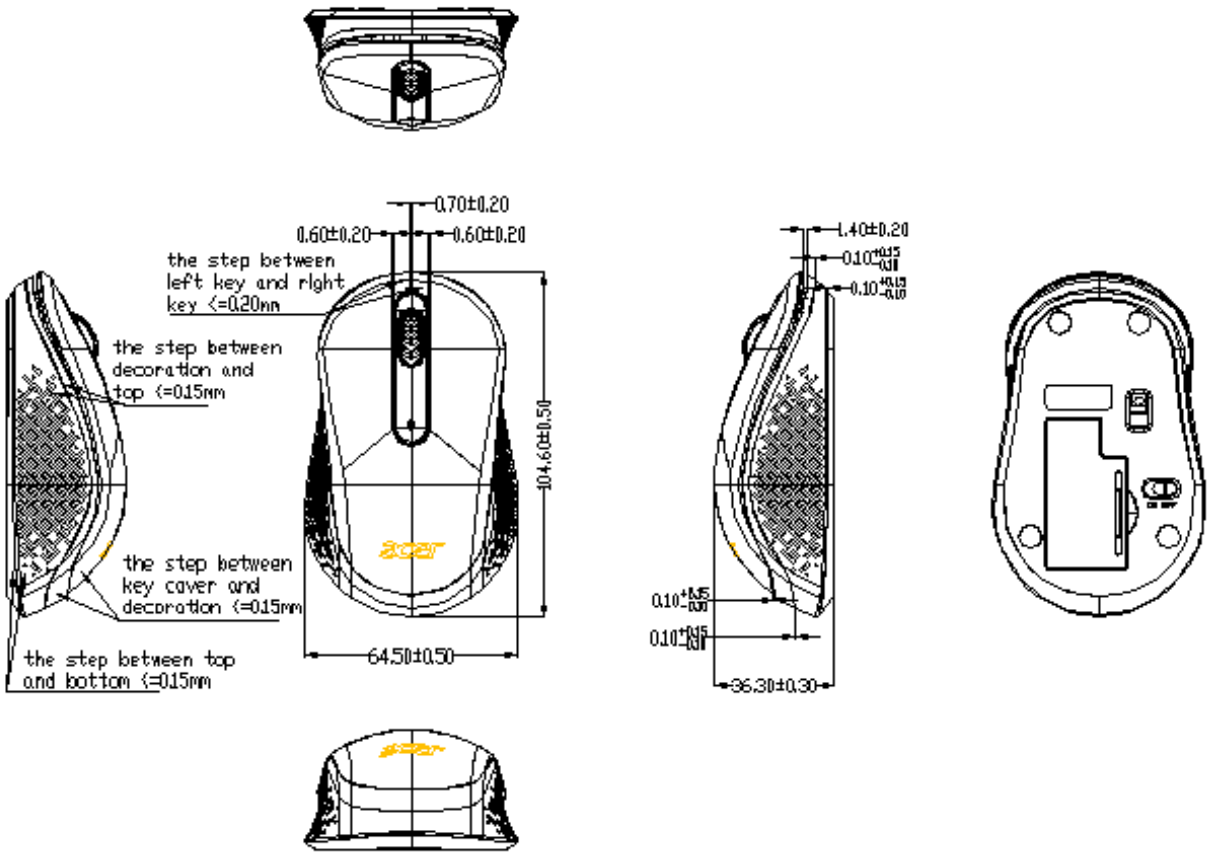
### 3.1 Mouse button force

- Operating force of Left & Right Button: 70 ± 30 gf
- Operating force of Middle Button: 160 ± 50 gf
- Scroll rotate force: 30 ± 20 gf.cm
- Operating force of Slide Switch: 230+/-100 gf

### 3.2 Material, Texture and Color

| *Physical* | *Min* | *Typ* | *Max* | *Test Conditions* | *Comments* |
|---|---|---|---|---|---|
| **Interface protocol** | | USB | | | |
| **Mouse color** | | | | | |
| Top cover | | Black | | | |
| Bottom cover | | Black | | | |
| Key cover | | Black | | | |
| Deco Ring | | Black/Silver | | | |
| Scroll Wheel | | Black | | | |
| 3D rubber | | Black | | | |
| Foot pad | | Black | | | |
| **Mouse Material** | | | | | |
| Top cover | | ABS | | | |
| Bottom cover | | ABS | | | |
| Key cover | | ABS | | | |
| 3D Wheel | | PC | | | |
| 3D Rubber | | Silicon | | | |
| Foot pad | | Teflon | | | |

### 3.3 Gap and step for the Mouse:




### 3.4 Rocking

Rocking or unbalance shall not exceed 0.15mm gap between foot and flat surface.

# 4 Electrical Specifications

### 4.1 System Interface

- USB Port only

### 4.2 Compatibility

- USB Specification Revision 1.1 or greater (Support remote wake up)

### 4.3 PID/VID

- Product ID: 4E9A
- Vendor ID: 0461
- Product string: Acer 2.4G Device

## 4.4 Power Rating

#### 4.4.1 Mouse unit

- Supply voltage: AA battery X 1 VCC=1.0~1.5V
- Low battery detection point: 1.1 V
- Power consumption is measured on white paper (input DC1.5V):
- Working Mode : 15 mA (Max)
- Standby Mode: 0.3 mA (Max)
- Sleeping Mode: 0.1 mA (Max)

#### 4.4.2 Receiver unit

- USB power consumption: < 25mA.
- USB suspend mode current: < 2.5mA

## 4.5 Battery Life

- 10 months typical

## 4.6 Mouse Tracking

- Sensor:

PAW3702DL optical Sensor
- Tracking Resolution:

1600 +/- 13 % DPI @10 inches/sec on white paper surface
- Tracking Speed:

Max 30 Inch/sec on Manila folder surface

## 4.7 RF Specifications

- A simple data transmitter/receiver pair operating at 2.4GHz range.
- Channels: 70
- Bandwidth: 1M
- Modulation: GFSK
- Data Rate (Maximum): 1Mbps
- Voltage (Supply) : 2.1 V ~ 3.6 V
- Transmitter Output Power- Programmable Output power up to 0 dBm
- Channel Switching Time: <100us
- Range >10m
- Sensitivity: <-91dBm

## 4.8 Mouse LED Indication

- When the mouse power is turned on:
  If the battery voltage >1.1V, LED indicator lights up for 3sec when mouse is turned on
  If the battery voltage is 1.0~1.1V, LED indicator lights up for 3sec after mouse is turned on, Then LED will flashes ON/OFF for 10 seconds for low battery indication.
  If the battery voltage <1.0V, The shut down LED indicator turn on and the mouse don't work at the same time.
- When the mouse is working and low battery situation is detected,
  If the battery voltage is 1.0~1.1V, the White LED will breathe for10 sec for low battery alarm. Each time is ON 200ms, OFF 200ms.

If the battery voltage< 1.0V, the power to the mouse will shut down, LED indicator lights up for 3sec before turning off the mouse when system shut down alert occurs.

- Pairing :
  LED indicator is flashing at interval period of ON for 200ms and OFF for 200ms during pairing intervals(5sec), If pairing succeeds , the indicator LED will be turned OFF, otherwise, the LED indicator will keep flashing during the 5sec pairing interval. (Note: Pairing only for factory access)
- Cut OFF / Power OFF:
  Turn off all LED

### 4.9 Dongle LED Indication

- No LED will be shown on the dongle

# 5 Keyboard physical specification

## 5.1 Introduction

Acer Elite wireless mainstream keyboard. It is configurable 104/105/109 keys layout. It is compatible with PC, It can be used Win7,Win8.1,Win10.The Windows Logo is a registered trademark of Microsoft Corporation.This specification defines mechanical, reliability, electrical requirements.

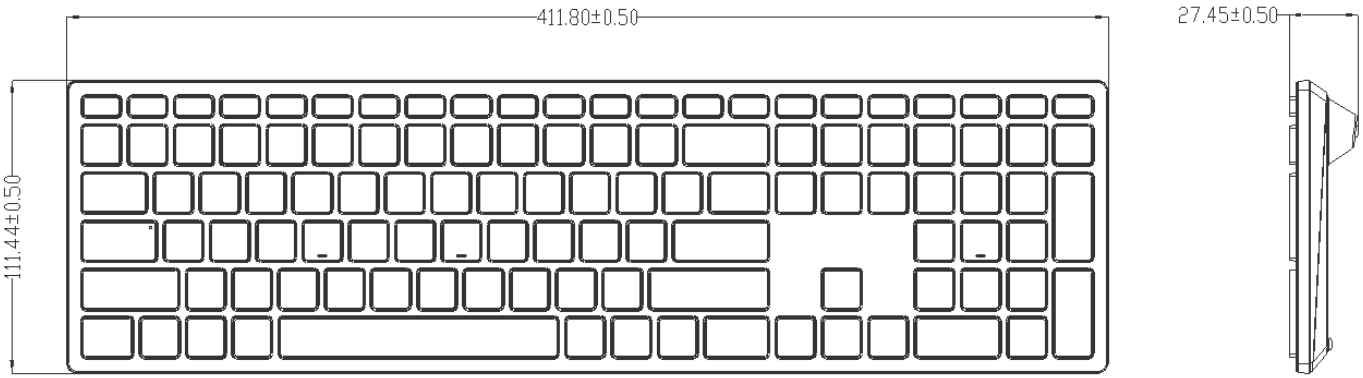


## 5.2 Product Specification

### 5.2.1 Mechanical Specification

#### 5.2.1.1 Keyboard Dimensions

Length: 411.80mm ± 0.5mm
Width: 111.44mm ± 0.5mm
Height: 27.45mm ± 0.5mm
Weight: 491.5g±30g（No battery）




#### 5.2.1.2 Material, Texture and Color

| | Material | Color | Texture |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Top case | ABS | Pantone Black | Hairline / MT11010 |
| Bottom case | HIPS | Pantone Black | MT11015 |
| Keycaps | ABS | Pantone Black / Printing +UV coating | MT11007 |
| Battery cover | HIPS | Pantone Black | MT11015 |
| Rubber foot | NR | Black | Matte |
| Rubber sheet | Silicone | Natural color | N/A |

### 5.2.1.3 Key switch Specifications

#### 5.2.1.3.1 Movement

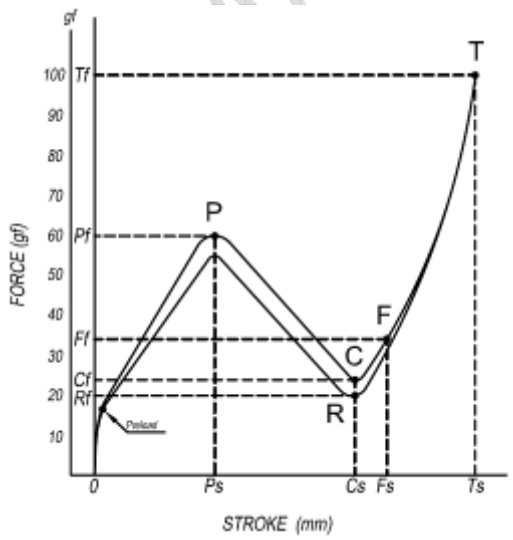
Pressing a key strongly will not affect the ON/OFF function of other key.

#### 5.2.1.3.2 Force Applied off Centre

The force requires operating a key switch when applied to any part of the corner or finger-dish of a keycap shall be no more than twice the force required to depress the switch at the centre of the key switch stem.

#### 5.2.1.3.3 Diagrams

| *Item* | *Type* | *Comment* |
|---|---|---|
| **Normal Key Switch** | | Life：5 millions cycles under normal operation.<br>(3~4 times/second, 180gf) |
| Peak force (Pf) | 60gf+/-15gf | |
| Peak Travel (Ps) | 0.5mm+/-0.3mm | |
| Total Travel (Ts) | 2.0mm+0.4/-0.2mm(@120gf) | |
| Contact Travel (Cs) | 1.1mm+0.4/-0.2mm | |
| Travel to electrical make(Fs) | Cs+0.25mm/-0mm | |
| Click Ratio | >40% | |
| Return Force | >15gf | |
| Bounce | 5ms | |




**Note:** The Max number for the domes which allow to out spec after Testing: 10% of the total keycaps' number.

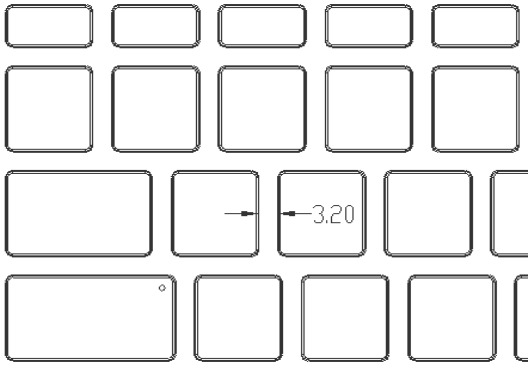
#### 5.2.1.4 Other Specifications

##### 5.2.1.4.1 Keycap Retention Force

0.8 kg （Function keys）and 1.2 kg (Normal keys) and 1.5kg (Spacebar) minimum to pull up the keys from frame.

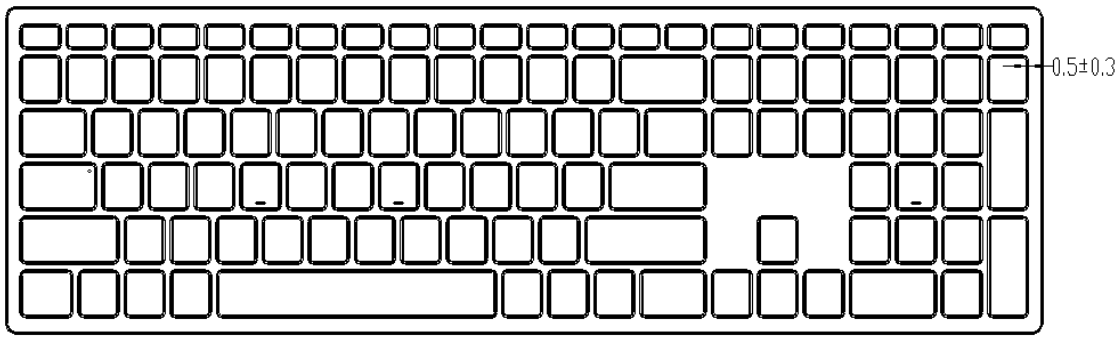
##### 5.2.1.4.2 Keycap Gaps

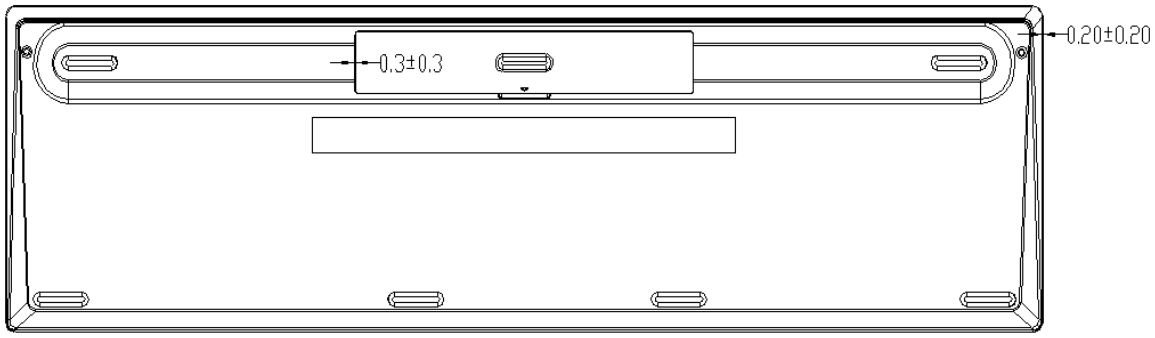
Gaps between adjacent row or column of keys:3.2+/-0.3 mm




##### 5.2.1.4.3 Gap between keycaps and top housing frame

Gap between top case and bottom case :0.2+/-0.2mm
Gap between top case and battery cover：0.3+/-0.3mm
Gap between keycaps and top housing frame: 0.5+/-0.3 mm




##### 5.2.1.4.4 Keycap Static Wobble

Wobble of keys is defined here as movement of points from its original position when force is applied.
Wobble under normal typing force:

For standard keys: < 0.50mm
For space bar: < 1.65mm
For other special keys: < 0.75mm

#### 5.2.1.4.5 Rocking

Rocking or unbalance shall be less than 0.3mm gap between KB rubber foot and flat surface.

#### 5.2.1.4.6 Ergonomics

Key caps height profile meet DIN standard with height of C row under 30 mm. Legend printings in key cap is meet ANSI standard, which is applying to all keys. The printed characters are visible within 30 cm distance from any viewing angle and contrast of printing exceeds 3:1. Adjustable tilt legs located in lower casework allowing unit can be adjusted to comfortable angle for user to operate. Tactile feeling feedback for users ensures proper make and break for each key press.

#### 5.2.1.4.7 Gap for the Keyboard

The product state put on the standard surface or plate. Four corners must land at the same time then measure the distance between the bulge (Rubber feet) and the surface with plug gauge. The gap≦1mm

# 6 Keyboard Electrical Characteristics

## 6.1 Keyboard PCB

Material: Double layer FR4
Flammability: UL 94V-0

## 6.2 Power Rating

Supply voltage: AA battery X 2 Vcc=2.0 ~ 3.2V
When battery voltage ≤ 2.2V, battery low indicator will display
When battery voltage ≤ 2.0V keyboard will be shut down
Power consumption is measured on 3.2V (input DC 3.2V):
Working Mode : 2.5 mA (Max) (Capslock LED off)
Idle Mode : 100 μA (Max)

## 6.3 Transmitter

RF Resolution: Pixart PAR2460
A simple data transmitter/receiver pair operating at 2.4GHz range.
Channels: 12 channels 2405MHz， 2407MHz，2418MHz， 2426MHz，2430MHz，2437MHz， 2442MHz，2447MHz， 2458MHz，2469MHz，2471MHz，2474MHz
Bandwidth: 1M
Modulation: GFSK
Data Rate (Maximum): 1M
Voltage (Supply) : 1.9 - 3.6 V
Transmitter Output Power: 0dBm
Channel Switching Time: <100us
Range >10m
Sensitivity: < -92 dBm

## 6.4 LED Indicator

Normal mode:

Battery installed: Amber LED on for 3 sec.

Caps lock on: white LED for 1 mins.

Low battery (Amber color)

Battery voltage <2.2V:amber LED indicator will flash 10 sec when 1st typing.(on / off : 200ms / 200ms)

Battery voltage < 2.0V: devices will shut down. LED off.

Key board turn on (Amber Color)

Behavior: Amber LED continuing lighting 3 seconds

Pairing (Amber Color)

Enter paring mode:

- Low frequency lighting: LED flashes 13 times (on/off: 200ms/200ms)
- Time out After 5 sec from entering paring mode

## 6.5 Estimation Battery Life

12 months typical.

## 6.6 Membrane

Key matrix traces with switch contact dots are layout and routed on 3 layers Mylar.
The loop impedance is less than 1000 OHM.
.

# 7 Environmental and Reliability Specifications

## 7.1 Mouse life test

### 7.1.1 Foot PAD endurance

| | |
|---|---|
| Load: | 100 gf vertical force |
| Speed: | 120 ±30 mm/sec. |
| Travel: | 80 km in any direction (Manila Laminate) |

Judgment: No functional defect, can't wear the button cover and performance must meet specification.

### 7.1.2 Left and Right Buttons Life Test

| | |
|---|---|
| Switching speed: | 2 cycles/sec. |
| Operating force of Left & Right Button: | 110±10 gf. |
| Operating cycles: | 1,000,000 cycles. |

Judging Criteria: No functional defect should be found for the switch actuation.

### 7.1.3 Middle Button Life Test

| | |
|---|---|
| Switching speed: | 2 cycles/sec. |
| Operating force of Middle Button: | 225 ±10gf. |
| Operating cycles of Scroll's switch: | 100,000 cycles. |

Judging Criteria: No functional defect should be found for the switch actuation.

### 7.1.4 Scroll Wheel Life Test

| | |
|---|---|
| Switching speed: | 30 cycle/min. |
| Operating rotate force: | 50 ±20 gf-cm |
| Operating cycles: | 100,000 cycles |

Judging Criteria: No functional defect should be found for the switch actuation.

## 7.2 Keyboard life test

### 7.2.1 Operating Life

Standard key is 5 millions cycles under normal operation.

### 7.2.2 Test Conditions

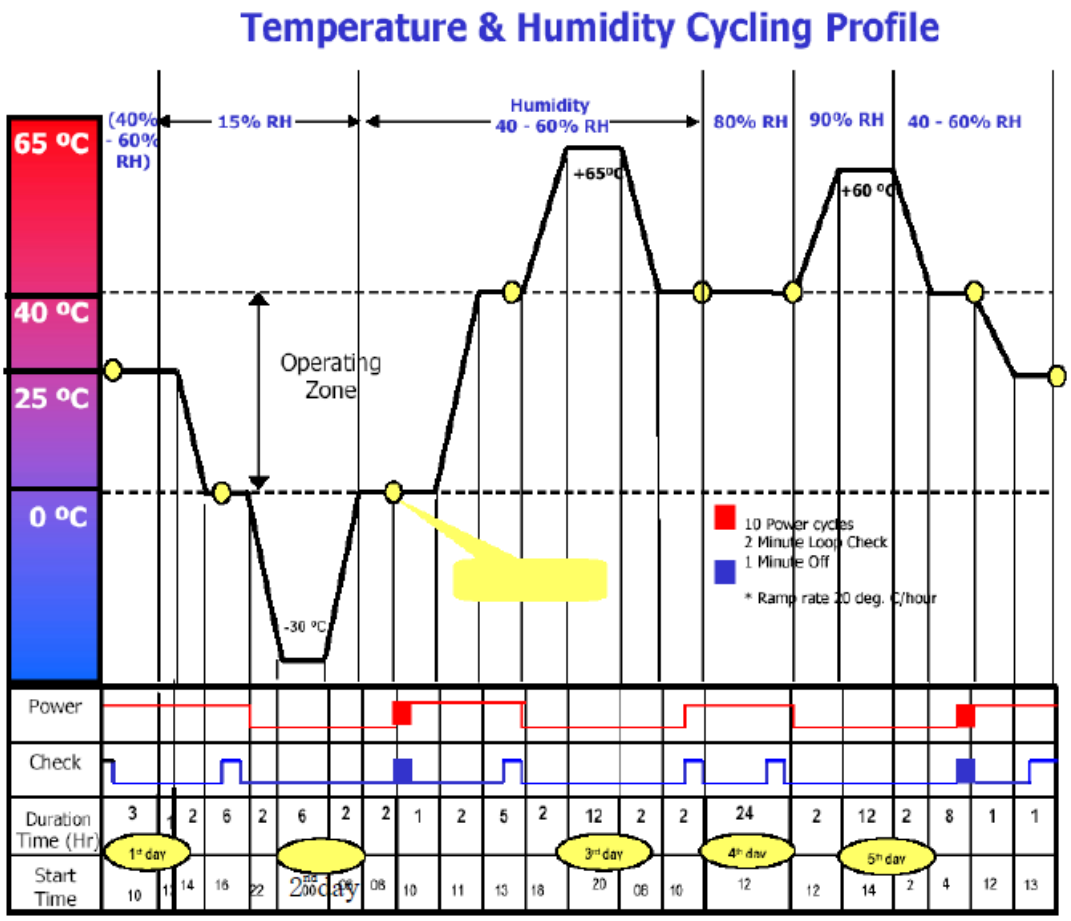
| | Standard Key | |
|---|---|---|
| **Speed of operation** | 3~4 times/second | |
| **Actuation force** | 180 +/- 20gf | |
| **Cycles of Operation** | 5M cycles | |
| **Criteria** | After test activating force ± 30% initial force | |

## 7.3 Reliability Test Items- Environmental

### 7.3.1 Temperature Shock

Temperature(time):-40℃(4hrs), 65℃(4hrs) as one cycle
**Transition time: ≦3 minutes**
Total 4 cycles
Accept criteria
No any abnormal from function, feeling and cosmetic.
No electric performance parameters deviates from the specification.

### 7.3.2 Temperature & Humidity Cycling Profile




Accept criteria

All function tests must pass, there must be no evidence of internal corrosion or bacteria – fungus growth after the test.

### 7.3.3 High Temperature High Humidity Storage Test

Condition: Temperature: 65℃

Humidity: 95%RH

Storage time: 48 hours

Leave the sample in room temperature for 1hour recovery.

Criteria: No any functional and mechanical and cosmetic failure could be found for product, and no scratch and damage and crack and shift could be found for all packaging materials (including all accessories) after test.

### 7.3.4 Low Temperature Storage Test

Condition: Temperature: -30℃

Storage time: 48 hours

Leave the sample in room temperature for 1hour recovery.

Criteria: No any functional and mechanical and cosmetic failure could be found for product, and

no scratch and damage and crack and shift could be found for all packaging materials (including all accessories) after test.

#### 7.3.5 High Temperature High Humidity Operating Test

Condition: Product power on

Temperature:40℃

Humidity: 90%RH

Duration: 24 hours

Criteria: No functional and cosmetic failures could be found during and after test.

#### 7.3.6 Low Temperature Operating Test

Condition: Product power on

Temperature:0℃

Duration: 24 hours

Criteria: No functional and cosmetic failures could be found during and after test.

### 7.4 Vibration Test

Condition: Place the UUT on the vibration surface in the normal operating position, bottom Mount the UUT to the test surface using the test fixture.
Starting at 5 Hz, vary the frequency of vibration from 5 to 500 Hz and back to 5 Hz at a logarithmic sweep rate of 1 octave per minute. Maintain a constant acceleration of ½ g (zero to peak) throughout the frequency sweep.
Conduct a resonant dwell 5 minutes at the same acceleration level for each of four UUT resonances, which result in the largest deflection. Repeat steps for each of the 3 axes.

Criteria: No functional and mechanical failures could be found during and after test.

| Frequency | Slope | PSD |
|---|---|---|
| Hz | DB/oct. | $g^2$/Hz |
| 5-100 | 0 | 0.015 |
| 100-137 | -6 | - |
| 137-350 | 0 | 0.0080 |
| 350-500 | -6 | - |
| 500 | - | 0.0039 |

($\sim 2.09G_{rms}$)
10 minutes/axis

Criteria: No functional and mechanical failures should be found during and after test.

## 7.5 Bare Drop Test

(1) Condition: 4 corners and 6 faces.
(2) 76cm drop on commercial office carpet. onto 1/4 inch carpet

Sample 5 units quired.
Criteria: No functional failure and mechanical damage could be found after test.

## 7.6 Unit Shock Test

#### 7.6.1 Half-Sine Shock – End-Use Handling, Non-Operational

Condition: Sample power off.

Axis: X,Y,Z axis (all 6 faces) – sample normal mode of operation.

Number of shocks: 1 shock/face.

Pulse duration: < 3 ms

Velocity change: 50lps (inch-per-second)- 65lps desired.

Criteria: No function failure and mechanical damage should be found after test.

#### 7.6.2 Trapezoidal Shock- Transportation Environment, Non-Operational

Condition: Sample power off.
Orientation: Orientation: All six faces: Front, Rear, Left, Right, Bottom, and Top.
Configuration: As intended for shipment.
Number of shocks: 1 shock/face.
Minimum faired acceleration: 30G's. Test also at 40 and 50G's to find margin.
Velocity change: 266lps (inch-per-second) for product mass (m) 20<m<40lbs
Criteria: No function failure and mechanical damage should be found after test.

## 7.7 Battery Insertion/Extraction Test

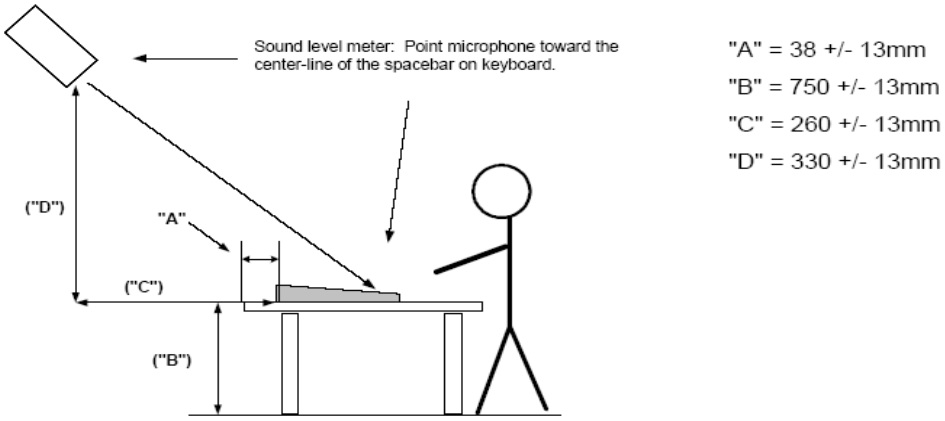
Sample size: 2pcs
Operating cycles: 300 cycles
Test speed: 2sec/ 1cycles
Criteria: No functional defect should be found. The units meet all the mechanical and electrical specification.

## 7.8 Battery cover Insertion and Extraction Test

Condition: Operating cycles: 200 cycles
Criteria: No functional defect could be found. The units meet all the mechanical and electrical specification.

## 7.9 Keyboard Acoustic Noise Test

Condition: Typing speed: 3 times / sec, Typing force: 120 - 150 gf
Specification 55dBA max for normal keys
60 dBA max for space bar



## 7.10 Printing Test

### 7.10.1 Mouse/Keyboard logo test

1. Taber CS-10F Eraser: Load: 500g, 20cycles (forward and backward count 1 cycle)Speed: 1 cycle / 2 seconds，Stroke: 2 cm
2. Alcohol (99.7%): Load: 500g, 50cycles(forward and backward count 1 cycle) Speed: 1 cycle / 2 seconds，Stroke: 2 cm
3. 3M 610 tape，Cut 100 lattices of 1mm*1mm, then 3M 610 tape adheres to the lattices for 1minutes, then pull up the tape rapidly at 90°.

**Requirement:**
Logo should be legible after test.

**Accept criteria:**
According to customer requirement.

### 7.10.2 Keyboard Keycap Legend Resistance Test

Condition: Eraser type: CS-10F eraser; Load: 500gf; Cycle: 1250 cycles,
Speed: 1cycle/2seconds. (One cycle= one come+ back)

Criteria: All inscriptions must be clearly legible after test.

### 7.10.3 Keyboard Chemical Resistance Test

Condition: Chemical materials: Coffee/Coke/Hand Cream/Artificial sweat (PH5.0)
Place temperature: 25℃ & 60%RH (Room climate)
Test duration: 24 hours.

Criteria: No discolor or crack or bubble could be found on painting surface after test.

### 7.10.4 Abrasion test-painting

Test Procedure per ASTM D4060

Test Parameters:
• CS10 abrasive wheels – resurfaced every 500 cycles
• 1000 grams total weight per wheel
• Run 50 cycles at a time until failure
• A failure is when the plastic substrate is first visible through the external painted surface.
• Plastic substrates with similar molded-in color to the exterior painted surface shall meet a minimum of 300 taber cycles before failure (Example: Silver paint on Silver Substrate).
• 300 Taber Cycles for AKZO-NOBEL 820-ZSG-101K P-Coat system requires a 20 micrometer minimum thickness. Thickness range should be 20 – 25 microns.

### 7.10.5 Adhesion test-painting

ross-Hatch Adhesion Test, Per ASTM D 3359: A lattice pattern with six cuts in each direction is made in the coating film of the painted test panel. Pressure-sensitive tape (semi-transparent tape with an adhesion strength of 38 plus/ minus 5 ounces per inch), one inch wide, is recommended. Pressure-sensitive tape is applied over the lattice and then removed; adhesion is evaluated by comparison with the illustration titled 'Classification of Adhesion Test Results'. The adhesion classification shall be at least 3B.

### 7.10.6 Alcohol abrasion test

Alcohol concentration: 99.7%,Load: 500 g,Cycle:300 cycles (forward and backward count 1 cycle)
Speed: 1 cycle / 2 seconds,Stroke: 2 cm
Painting should not peel off and substrate material should not be exposed after test.

## 7.11 MTBF Test

Condition: All keyboards are working during the demonstration period (172hours).
Testing temperature: 55℃
Product warranty time is 3 years, product working 24hours per day.
MTBF target= 3years x 365days x 24hours= 26280 hours.

Criteria: After 172hours test, no any functional failure could be found for all keyboards.

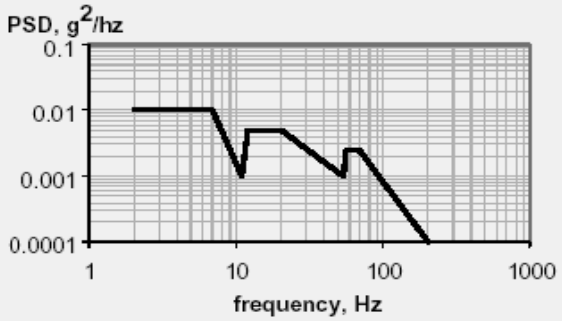
## 7.12 Packaging Test

### 7.12.1 Random Vibration Survival, Non-Operational

Condition: According to test vibration profile.
Test 60 minutes for each axis (X, Y, Z axis).

| Hz | PSD, $g^2$/Hz |
|---|---|
| 2 | 0.01 |
| 7 | 0.01 |
| 11 | 0.001 |
| 12 | 0.005 |
| 20 | 0.005 |
| 54 | 0.001 |
| 55 | 0.0025 |
| 70 | 0.0025 |
| 200 | 0.0001 |

Overall Level ≅ 0.54 $g_{rms}$




Criteria: All packaging materials (including all attachments) should not be damaged,
And product function and appearance and structure should be good.

### 7.12.2 Packaging Drop Test

Test Condition
One carton drop 6 faces 3edges and one corner onto concrete surface from 76cm height.
Test Equipment
Drop Tester
Accept. Criteria
No functional defect should be found after test.
The structure can't any broken, deform or separate of upper case and lower case after test.
The bracket can't pop out after test.
No any structure broken or interfere.

### 7.12.3 Package Compression test

Condition: 23℃+/-1℃; 50%+/-2%RH
Loading: load the shipping unit to the minimum required load value, as calculated below.
Removed the load after reaching the specified value.

$$L = M \times J \frac{H - h}{h} \times F = ??? \quad Kg \times \frac{H - h}{h} \times 4 = ??? \quad kg$$

Where:
L=Minimum required load

M=Mass of one shipping unit or individual container, lb. or Kg
J= 1 lbf/lb. or 9.8m/s2
H=Maximum height of stack in storage or transit vehicle, in. or m
h=Height of shipping unit or individual container, in. or m, and
F=a factor to account for the combine effect of the individual factors described above
F=4 (with additional non-corrugated internal support) when the cushion/product or inserts add additional compressive strength.
Reference: CPC-TM_Rev3.1 section 20 TEST1: Compression test

Criteria: The test data of three samples are all large than the data required for the carton.

# 8 Keyboard Fireware specification

## 8.1 Key matrix

**Acer Elite MATRIX for wire & wireless KB**

| | R0 | R1 | R2 | R3 | R4 | R5 | R6 | R7 |
|---|---|---|---|---|---|---|---|---|
| S0 | | Lock(Win +L) | Main Page | Task View | CTRL_R | Action Center | CTRL_L | F5 |
| S14 | (K) + | K107 | (K) ENTER | ← | ROMA(K133) | ↑ | HOME | END |
| S17 | WIN_L | L_Fn | R_Fn | VOL+ | | | MUTE | F12 |
| S16 | SPACE | K150_L | | (K) . | **K56(56)** | APP | K151_R | N-CHG(K131) |
| S13 | (K) 9 | (K) 6 | (K) 3 | | (K) * | (K) - | PAGE UP | PAGE DOWN |
| S12 | (K) 8 | (K) 5 | (K) 2 | (K) 0 | (K) / | → | INS | |
| S11 | (K) 7 | (K)4 | (K) 1 | | Caculator | ↓ | Delete | CHG (K132) |
| S1 | Q | TAB | A | ESC | Z | | `~ | 1 ! |
| S2 | W | CAP | S | K45 | X | | F1 | 2 @ |
| S15 | | SHIFT_L | SHIFT_R | | | | | |
| S3 | E | F3 | D | F4 | C | | F2 | 3 # |
| S4 | R | T | F | G | V | B | 5% | 4 $ |
| S5 | U | Y | J | H | M | N | 6^ | 7 & |
| S6 | I | ]} | K | F6 | ,(<) | ~~K56(56)~~ | (= +) | 8 * |
| S8 | P | [{ | ; ( : ) | " (' ) | K42(42) | ?/ | _- | 0 ) |
| S7 | O | F7 | L | | .(>) | | F8 | 9 ( |
| S10 | K14(14) | BACK | \| | F11 | ENTER(L) | | F9 | F10 |
| S9 | VOL - | | | ALT-L | | ALT-R | SETTING | PRINT screen |

## 8.2 Combination key function

### 8.2.1 Combination Key Function if pressing Fn:

Fn+F1=F1 => USB Code:3A
Fn+F2=F2 => USB Code:3B
Fn+F3=F3 => USB Code:3C
Fn+F4=F4 => USB Code:3D
Fn+F5=F5 => USB Code:3E

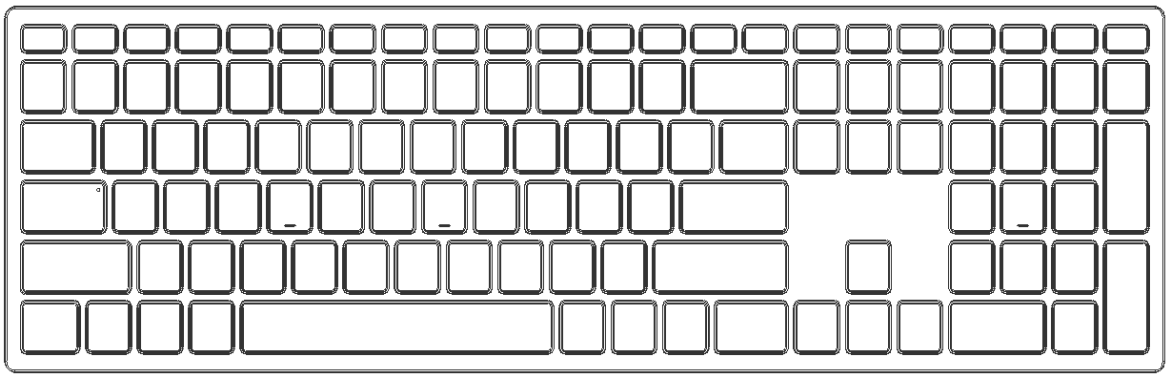
Fn+F6=F6 => USB Code:3F
Fn+F7=F7 => USB Code:40
Fn+F8=F8 => USB Code:41
Fn+F9=F9 => USB Code:42
Fn+F10=F10 => USB Code:43
Fn+F11=F11 => USB Code:44
Fn+F12=F12 => USB Code:45
Fn+右 shift=pause=>USB Code:48
Fn+(K+) =(K.) =>USB Code :85 For 巴西文

#### 8.2.2 Function if No pressing Fn:

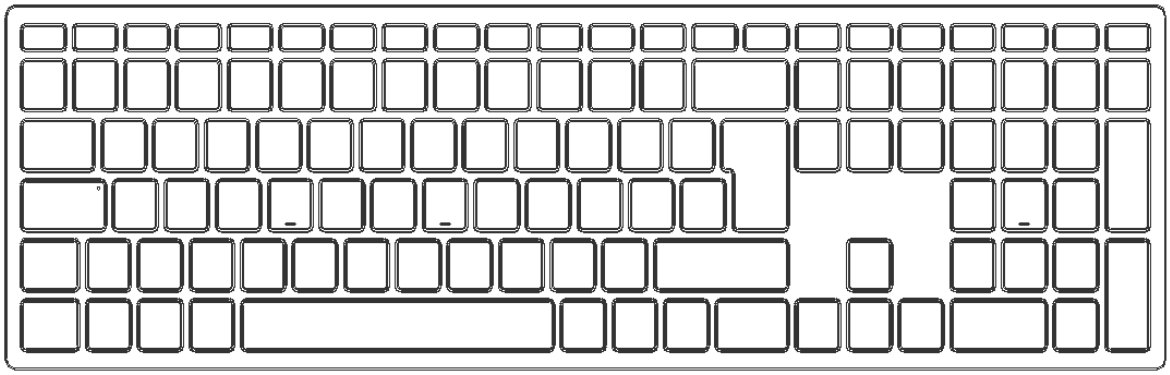
F1=> Win + K
F2= Sleep => USB Code = 01 0002
F3= Email => USB Code = 0C 018A
F4= Scr LK => USB Code = 0x0047
F5= Refresh => USB Code = 0C 0227
F6= My Favorite => 沒有標準 key code 需要 driver support
F7= Search => USB Code = 0C 0221
F8= Brightness Down=> USB Code = 0x0070
F9= Brightness Up => USB Code = 0x006F
F10= Rewind => USB Code = Ctrl+Shift+B
F11= Play/Pause => USB Code = 0C 00CD
F12= Forward => USB Code = Ctrl+Shift+F
F21= USB Code = 0x70
Lock (Win+L) -> Win + L
Main Page -> Win + D
Action Center -> Win + Shift + Alt + F21 and Win + A 都是 Action Center
Calculator -> 0x0192
Setting charm -> Win + F21[ Win + C (Only support win8/8.1). Win + F21 在 Win10 是 Action Center]
Task view -> Win + Tab

# 9 Keyboard Layout

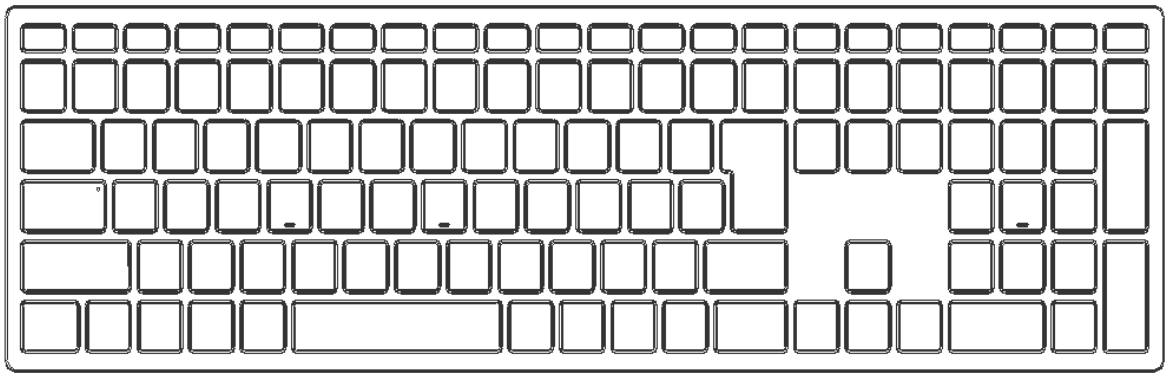
## 9.1 104 keys layout (US)



## 9.2 105 keys layout (UK)



## 9.3 109 keys layout (JP)



# 10 Regulatory Certifications

## 10.1 Electromagnetic Compatibility (EMC)

### 10.1.1 Conducted /Radiated emissions

European Standard EN 55022: 1998 Class B.
Frequency Range of Test: From 30MHz to 1000 MHz
Test Distance: 10 M
Temperature: 15~35 ºC
Relative Humidity: 30~60 % RH
Emission level(dBuV/m)=20log Emission level(uV/m)
Test system: Standard PC
Required Level: At least 4dB margin

### 10.1.2 Electrostatic Susceptibility Discharge

IEC61000-4-2(Continued functionality)
Generic standard: EN 55 032:2010
Performance criteria: B
Contact discharge: ±4 KV
Air discharge: ±8 KV for Air discharge
Temperature: 15~30℃
Relative Humidity: 30~60%RH

### 10.1.3 Radiated susceptibility

EN/IEC 61000-4-3
Level: 3V/m, 80-1000MHZ

### 10.1.4 Electrical Fast Transient

| | |
|---|---|
| Basic standard: | IEC 61000-4-4 |
| Performance criteria: | B |
| Level: | on power supply-41 |
| Test Voltage: | ±1 KV on signal /control lines. |
| Temperature: | 15~30℃ |
| Relative Humidity: | 30~60%RH |

### 10.1.5 Agency / Safety Certifications

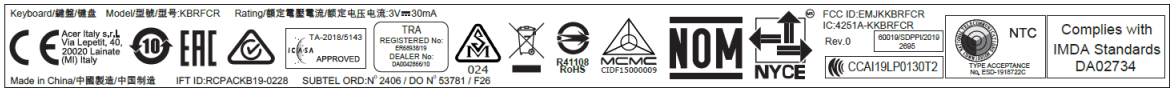
| | |
|---|---|
| UAE | TRA |
| EU | CE |
| AZ-NU | RCM |
| USA | FCC |
| Canada | IC |
| Indonesia | SDPPI |
| Mexico | IFT |
| Malaysia | SIRIM |
| Philippine | NTC |
| Russia | CU EAC |
| Singapore | IMDA |
| Thailand | SDoC |
| Taiwan | NCC |
| Taiwan | BSMI |
| South Africa | ICASA |
| Israel | RF/Telecom |
| Chile | Subtel |
| Moldova, Republic of | ISC |

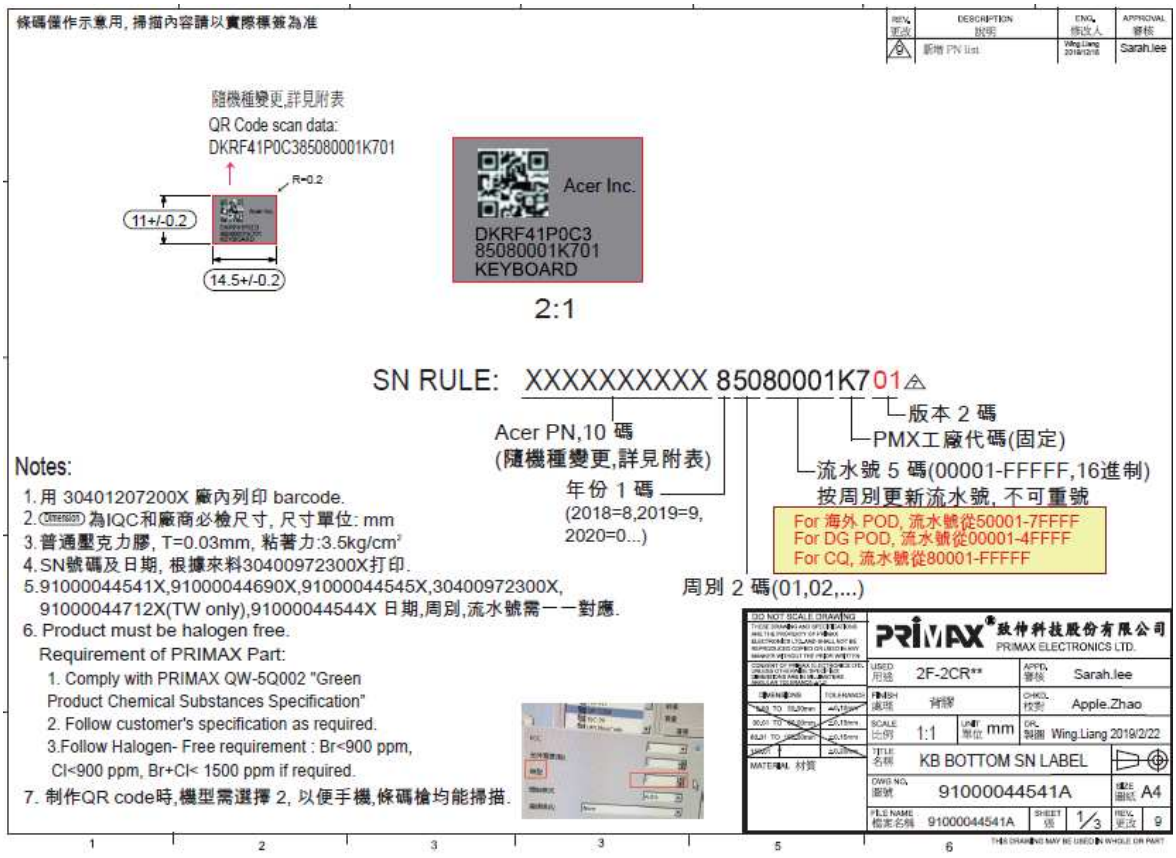
### 10.1.6 Green Requirement

Follow as regulation: RoHS, RoHS2
Requirement of Primax Green part:
Compy with Primax QW-5Q002"Green product Chemical Substances Specification".
Follow customer's specification as required.
China ROHS Require.

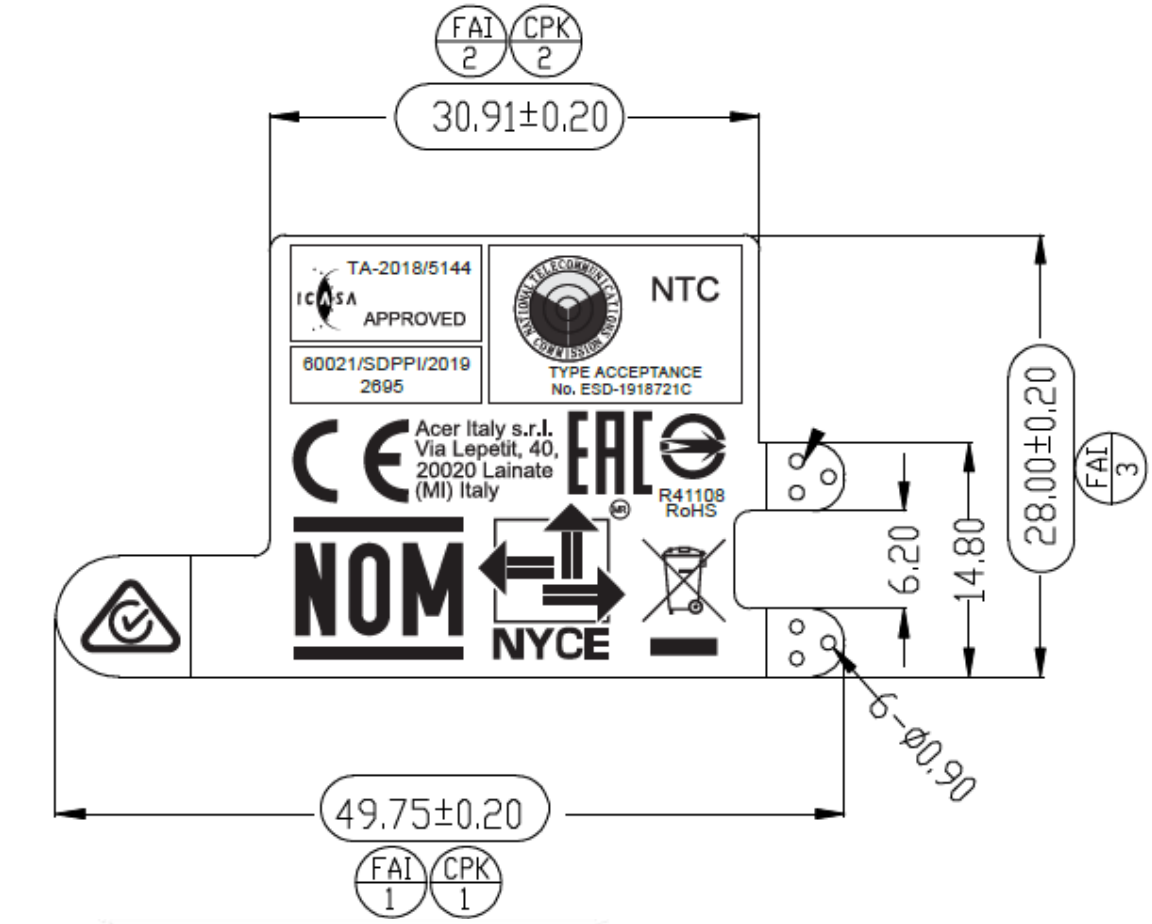
# 11 Packing Drawing

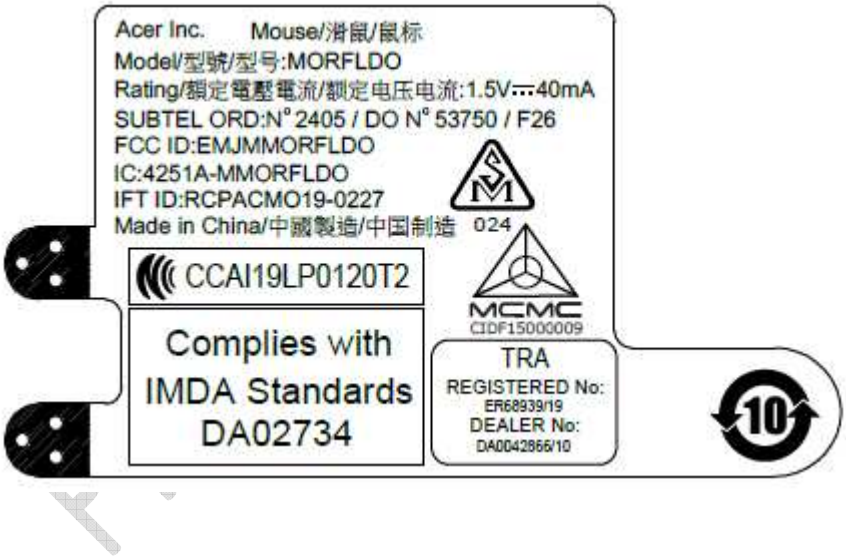
## 11.1 KB Bottom Label

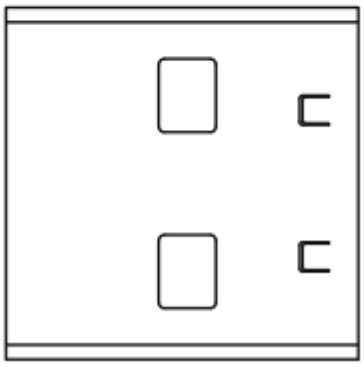


## 11.2 MS SN Label

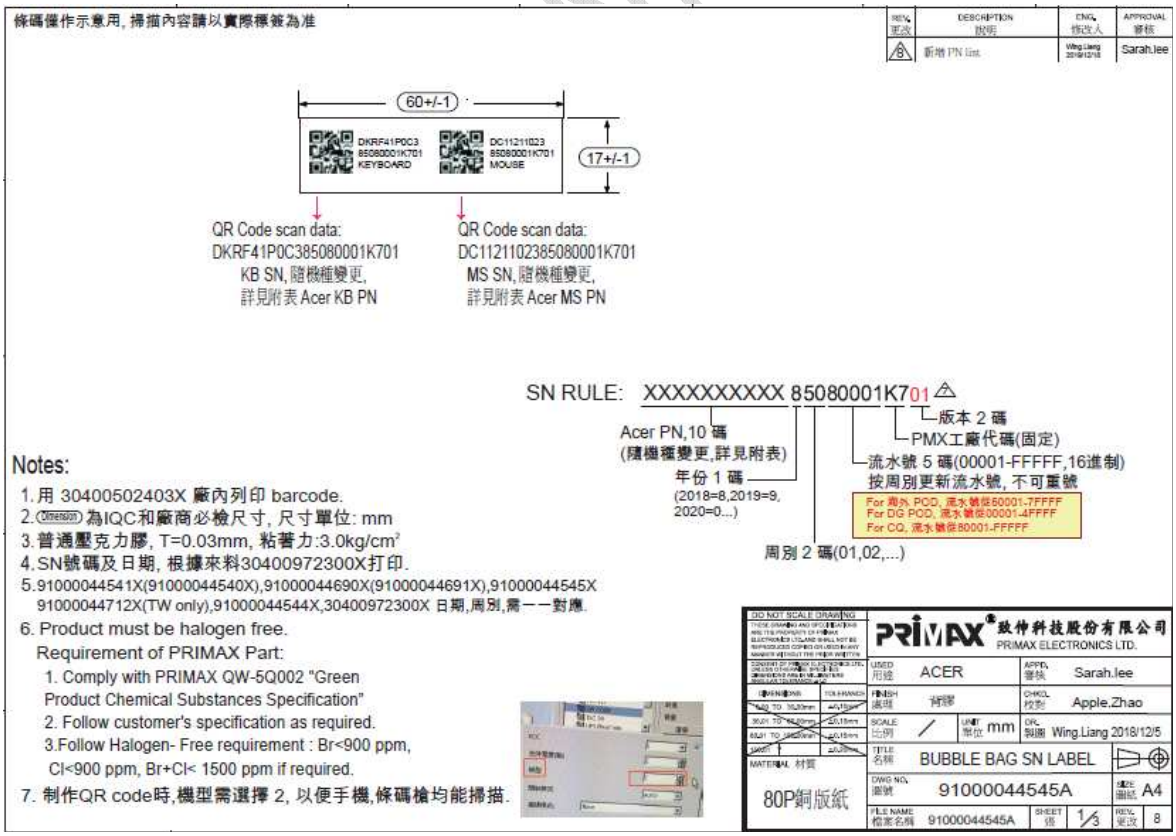

FAI 2
CPK 2
30,91±0,20
TA-2018/5144
APPROVED
60021/SDPPI/2019
2695
NTC
TYPE ACCEPTANCE
No. ESD-1918721C
Acer Italy s.r.l.
Via Lepetit, 40,
20020 Lainate
(MI) Italy
R41108
RoHS
NOM
NYCE
6,20
14,80
28,00±0,20
FAI 3
6-Ø0,90
49,75±0,20
FAI 1
CPK 1


Acer Inc. Mouse/滑鼠/鼠标
Model/型號/型号:MORFLDO
Rating/額定電壓電流/额定电压电流:1.5V⎓40mA
SUBTEL ORD:N° 2405 / DO N° 53750 / F26
FCC ID:EMJMMORFLDO
IC:4251A-MMORFLDO
IFT ID:RCPACMO19-0227
Made in China/中國製造/中国制造
024
CCAI19LP0120T2
MCMC
CIDF15000009
Complies with
IMDA Standards
DA02734
TRA
REGISTERED No:
ER68939/19
DEALER No:
DA0042866/10

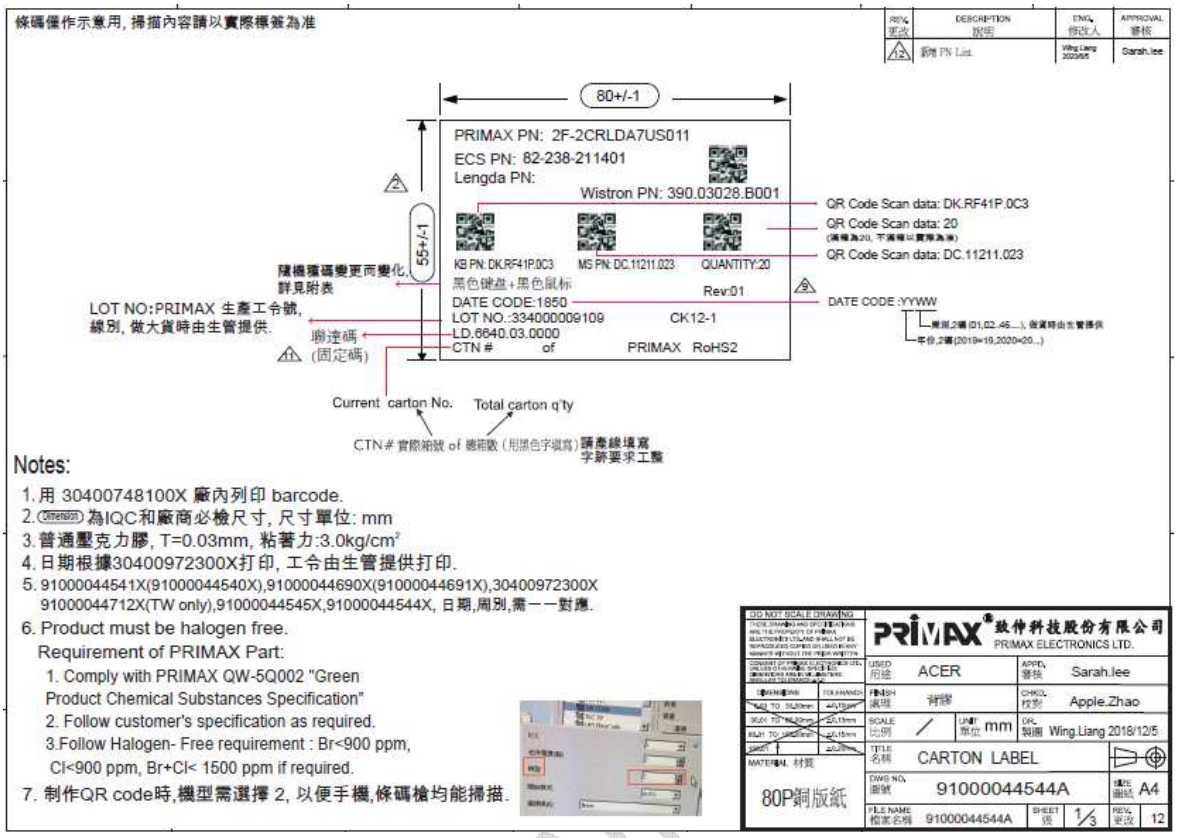





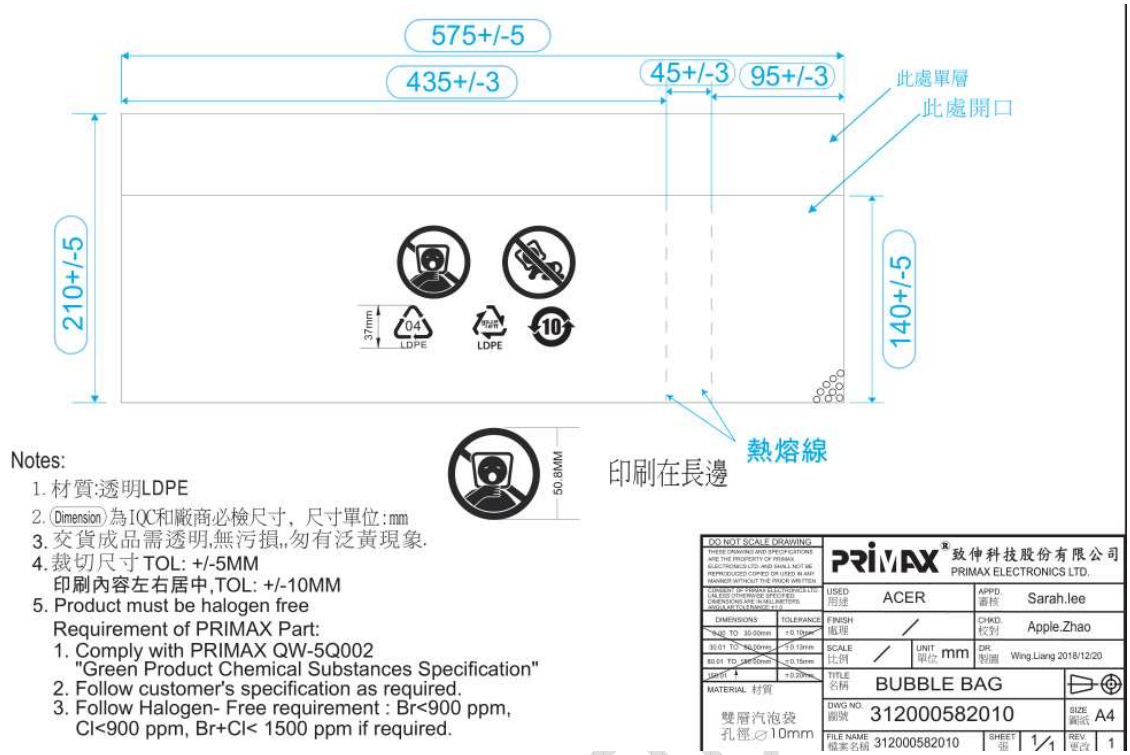
## 11.3 Bubble Bag Label



## 11.4 Carton Label



## 11.5 Bubble bag

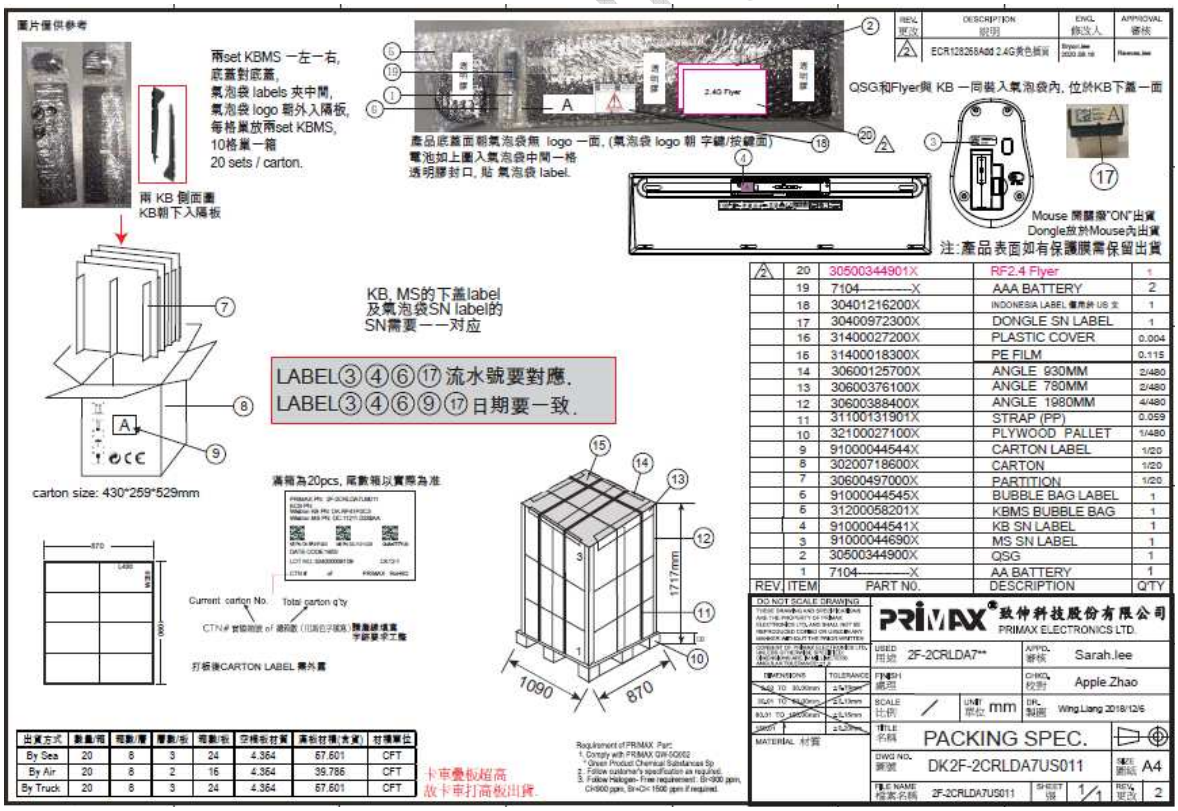



Notes:

1. 材質:透明LDPE
2. (Dimension)為IQC和廠商必檢尺寸，尺寸單位:mm
3. 交貨成品需透明,無污損,,勿有泛黃現象.
4. 裁切尺寸TOL: +/-5MM
   印刷內容左右居中,TOL: +/-10MM
5. Product must be halogen free
   Requirement of PRIMAX Part:
   1. Comply with PRIMAX QW-5Q002
      "Green Product Chemical Substances Specification"
   2. Follow customer's specification as required.
   3. Follow Halogen- Free requirement : Br<900 ppm,
      Cl<900 ppm, Br+Cl< 1500 ppm if required.

| | | | |
|---|---|---|---|
| DO NOT SCALE DRAWING | PRIMAX 致伸科技股份有限公司 PRIMAX ELECTRONICS LTD. | | |
| USED 用途 | ACER | APPD. 審核 | Sarah.lee |
| FINISH 處理 | / | CHKD. 校對 | Apple.Zhao |
| SCALE 比例 | / | UNIT 單位 mm | DR. 製圖 Wing.Liang 2018/12/20 |
| TITLE 名稱 | BUBBLE BAG | | |
| MATERIAL 材質 雙層汽泡袋 孔徑⌀10mm | DWG NO. 圖號 312000582010 | | SIZE 圖紙 A4 |
| | FILE NAME 檔案名稱 312000582010 | SHEET 張 1/1 | REV. 更改 1 |

## 11.6 DK Drawing




| REV. | ITEM | PART NO. | DESCRIPTION | Q'TY |
|---|---|---|---|---|
| A2 | 20 | 30500344901X | RF2.4 Flyer | 1 |
| | 19 | 7104----------X | AAA BATTERY | 2 |
| | 18 | 30401216200X | INDONESIA LABEL 僅供於 US 支 | 1 |
| | 17 | 30400972300X | DONGLE SN LABEL | 1 |
| | 16 | 31400027200X | PLASTIC COVER | 0.004 |
| | 15 | 31400018300X | PE FILM | 0.115 |
| | 14 | 30600125700X | ANGLE 930MM | 2/480 |
| | 13 | 30600376100X | ANGLE 780MM | 2/480 |
| | 12 | 30600388400X | ANGLE 1980MM | 4/480 |
| | 11 | 31100131901X | STRAP (PP) | 0.059 |
| | 10 | 32100027100X | PLYWOOD PALLET | 1/480 |
| | 9 | 91000044544X | CARTON LABEL | 1/20 |
| | 8 | 30200718600X | CARTON | 1/20 |
| | 7 | 30600497000X | PARTITION | 1/20 |
| | 6 | 91000044545X | BUBBLE BAG LABEL | 1 |
| | 5 | 31200058201X | KBMS BUBBLE BAG | 1 |
| | 4 | 91000044541X | KB SN LABEL | 1 |
| | 3 | 91000044690X | MS SN LABEL | 1 |
| | 2 | 30500344900X | QSG | 1 |
| | 1 | 7104----------X | AA BATTERY | 1 |

| | | | |
|---|---|---|---|
| DO NOT SCALE DRAWING | PRIMAX 致伸科技股份有限公司 PRIMAX ELECTRONICS LTD. | | |
| USED 用途 | 2F-2CRLDA7** | APPD. 審核 | Sarah.lee |
| FINISH 處理 | / | CHKD. 校對 | Apple Zhao |
| SCALE 比例 | / | UNIT 單位 mm | DR. 製圖 Wing.Liang 2018/12/6 |
| TITLE 名稱 | PACKING SPEC. | | |
| MATERIAL 材質 | DWG NO. 圖號 DK2F-2CRLDA7US011 | | SIZE 圖紙 A4 |
| | FILE NAME 檔案名稱 2F-2CRLDA7US011 | SHEET 張 1/1 | REV. 更改 2 |

| 出貨方式 | 數量/箱 | 箱數/層 | 層數/板 | 箱數/板 | 空機板材質 | 滿板材積(含貨) | 材積單位 |
|---|---|---|---|---|---|---|---|
| By Sea | 20 | 8 | 3 | 24 | 4.364 | 67.601 | CFT |
| By Air | 20 | 8 | 2 | 16 | 4.364 | 39.786 | CFT |
| By Truck | 20 | 8 | 3 | 24 | 4.364 | 67.601 | CFT |

## 11.7 Acer vs Primax PN

| Item | Language | Key | Acer PN | Primax PN (黑色键盘+黑色鼠标) | Short Description |
|---|---|---|---|---|---|
| 1 | US | 104 | DC.11211.023 DK.RF41P.0C3 | 2F-2CRLDA7US011 | Keyboard PRIMAX KBRFCR RF2.4 Black US Acer logo |
| 2 | TW | 104 | DC.11211.023 DK.RF41P.0C4 | 2F-2CRLDA7TW011 | Keyboard PRIMAX KBRFCR RF2.4 Black Traditional Chinese Acer logo |
| 3 | US-I | 105 | DC.11211.023 DK.RF41P.0C5 | 2F-2CRLDA7U1011 | Keyboard PRIMAX KBRFCR RF2.4 Black US International Acer logo |
| 4 | Thailand | 104 | DC.11211.023 DK.RF41P.0C6 | 2F-2CRLDA7TH011 | Keyboard PRIMAX KBRFCR RF2.4 Black Thailand Acer logo |
| 5 | Spanish | 105 | DC.11211.023 DK.RF41P.0C7 | 2F-2CRLDA7SP011 | Keyboard PRIMAX KBRFCR RF2.4 Black Spanish Acer logo |
| 6 | Portuguese | 105 | DC.11211.023 DK.RF41P.0C8 | 2F-2CRLDA7PT011 | Keyboard PRIMAX KBRFCR RF2.4 Black Portuguese Acer logo |
| 7 | German | 105 | DC.11211.023 DK.RF41P.0C9 | 2F-2CRLDA7GM011 | Keyboard PRIMAX KBRFCR RF2.4 Black German Acer logo |
| 8 | Italian | 105 | DC.11211.023 DK.RF41P.0CA | 2F-2CRLDA71T011 | Keyboard PRIMAX KBRFCR RF2.4 Black Italian Acer logo |
| 9 | French | 105 | DC.11211.023 DK.RF41P.0CB | 2F-2CRLDA7FR011 | Keyboard PRIMAX KBRFCR RF2.4 Black French Acer logo |
| 10 | UK | 105 | DC.11211.023 DK.RF41P.0CC | 2F-2CRLDA7UK011 | Keyboard PRIMAX KBRFCR RF2.4 Black UK Acer logo |
| 11 | Swiss/G | 105 | DC.11211.023 DK.RF41P.0CD | 2F-2CRLDA7SG011 | Keyboard PRIMAX KBRFCR RF2.4 Black Swiss/G Acer logo |
| 12 | Belgium | 105 | DC.11211.023 DK.RF41P.0CE | 2F-2CRLDA7BE011 | Keyboard PRIMAX KBRFCR RF2.4 Black Belgium Acer logo |
| 13 | Slovenian | 105 | DC.11211.023 DK.RF41P.0CF | 2F-2CRLDA7SL011 | Keyboard PRIMAX KBRFCR RF2.4 Black Slovenian Acer logo |
| 14 | Kazakh | 105 | DC.11211.023 DK.RF41P.0CG | 2F-2CRLDA7KZ011 | Keyboard PRIMAX KBRFCR RF2.4 Black Kazakh Acer logo |
| 15 | Nordic | 105 | DC.11211.023 DK.RF41P.0CH | 2F-2CRLDA7N4011 | Keyboard PRIMAX KBRFCR RF2.4 Black Nordic Acer logo |
| 16 | English/Canadian French | 105 | DC.11211.023 DK.RF41P.0CJ | 2F-2CRLDA7EC011 | Keyboard PRIMAX KBRFCR RF2.4 Black English/Canadian French Acer logo |
| 17 | Czech/Slovak | 105 | DC.11211.023 DK.RF41P.0CK | 2F-2CRLDA7CS011 | Keyboard PRIMAX KBRFCR RF2.4 Black Czech/Slovak Acer logo |
| 18 | Spanish Latin | 105 | DC.11211.023 DK.RF41P.0CL | 2F-2CRLDA7LA011 | Keyboard PRIMAX KBRFCR RF2.4 Black Spanish Latin Acer logo |
| 19 | Spanish Latin | 105 | DC.11211.024 DK.RF41P.0CM | 2F-2CRLDA7LA012 | Keyboard PRIMAX KBRFCR RF2.4 Black Spanish Latin Acer logo, without battery |
| 20 | UKranian/Russian | 105 | DC.11211.023 DK.RF41P.0CN | 2F-2CRLDA7AE011 | Keyboard PRIMAX KBRFCR RF2.4 Black UKranian/Russian Acer logo |
| 21 | Russian | 105 | DC.11211.023 DK.RF41P.0CP | 2F-2CRLDA7RU011 | Keyboard PRIMAX KBRFCR RF2.4 Black Russian |
| 24 | Turkish(Q Type) | 105 | DC.11211.023 DK.RF41P.0CQ | 2F-2CRLDA7TQ011 | Keyboard PRIMAX KBRFCR RF2.4 Black Turkish Acer logo |
| 26 | Arabic/English | 105 | DC.11211.023 DK.RF41P.0CR | 2F-2CRLDA7AC011 | Keyboard PRIMAX KBRFCR RF2.4 Black Arabic/English Acer logo |
| 27 | Arabic/French | 105 | DC.11211.023 DK.RF41P.0CT | 2F-2CRLDA7AF011 | Keyboard PRIMAX KBRFCR RF2.4 Black Arabic/French Acer logo |
| 28 | Hungarian | 105 | DC.11211.023 DK.RF41P.0CS | 2F-2CRLDA7HU011 | Keyboard PRIMAX KBCR21 RF2.4 Black Hungarian Acer logo |
| 29 | Czech | 105 | DC.11211.023 DK.RF41P.0CU | 2F-2CRLDA7CZ011 | Keyboard PRIMAX KBRFCR RF2.4 Black Czech Acer logo |
| 30 | Hebrew | 105 | DC.11211.023 DK.RF41P.0CV | 2F-2CRLDA7HB011 | Keyboard PRIMAX KBRFCR RF2.4 Black Hebrew Acer logo |

| Item | Language | Key | Acer PN | Primax PN (黑色键盘+银色鼠标) | Short Description |
|---|---|---|---|---|---|
| 1 | US | 104 | DC.11211.026 DK.RF41P.0C3 | 2F-2CRLDA7US121 | Keyboard PRIMAX KBRFCR RF2.4 Black US Acer logo |
| 2 | TW | 104 | DC.11211.026 DK.RF41P.0C4 | 2F-2CRLDA7TW121 | Keyboard PRIMAX KBRFCR RF2.4 Black Traditional Chinese Acer logo |
| 3 | US-I | 105 | DC.11211.026 DK.RF41P.0C5 | 2F-2CRLDA7U1121 | Keyboard PRIMAX KBRFCR RF2.4 Black US International Acer logo |
| 4 | Thailand | 104 | DC.11211.026 DK.RF41P.0C6 | 2F-2CRLDA7TH121 | Keyboard PRIMAX KBRFCR RF2.4 Black Thailand Acer logo |
| 5 | Spanish | 105 | DC.11211.026 DK.RF41P.0C7 | 2F-2CRLDA7SP121 | Keyboard PRIMAX KBRFCR RF2.4 Black Spanish Acer logo |
| 6 | Portuguese | 105 | DC.11211.026 DK.RF41P.0C8 | 2F-2CRLDA7PT121 | Keyboard PRIMAX KBRFCR RF2.4 Black Portuguese Acer logo |
| 7 | German | 105 | DC.11211.026 DK.RF41P.0C9 | 2F-2CRLDA7GM121 | Keyboard PRIMAX KBRFCR RF2.4 Black German Acer logo |
| 8 | Italian | 105 | DC.11211.026 DK.RF41P.0CA | 2F-2CRLDA71T121 | Keyboard PRIMAX KBRFCR RF2.4 Black Italian Acer logo |
| 9 | French | 105 | DC.11211.026 DK.RF41P.0CB | 2F-2CRLDA7FR121 | Keyboard PRIMAX KBRFCR RF2.4 Black French Acer logo |
| 10 | UK | 105 | DC.11211.026 DK.RF41P.0CC | 2F-2CRLDA7UK121 | Keyboard PRIMAX KBRFCR RF2.4 Black UK Acer logo |
| 11 | Swiss/G | 105 | DC.11211.026 DK.RF41P.0CD | 2F-2CRLDA7SG121 | Keyboard PRIMAX KBRFCR RF2.4 Black Swiss/G Acer logo |
| 12 | Belgium | 105 | DC.11211.026 DK.RF41P.0CE | 2F-2CRLDA7BE121 | Keyboard PRIMAX KBRFCR RF2.4 Black Belgium Acer logo |
| 13 | Slovenian | 105 | DC.11211.026 DK.RF41P.0CF | 2F-2CRLDA7SL121 | Keyboard PRIMAX KBRFCR RF2.4 Black Slovenian Acer logo |
| 14 | Kazakh | 105 | DC.11211.026 DK.RF41P.0CG | 2F-2CRLDA7KZ121 | Keyboard PRIMAX KBRFCR RF2.4 Black Kazakh Acer logo |
| 15 | Nordic | 105 | DC.11211.026 DK.RF41P.0CH | 2F-2CRLDA7N4121 | Keyboard PRIMAX KBRFCR RF2.4 Black Nordic Acer logo |
| 16 | English/Canadian French | 105 | DC.11211.026 DK.RF41P.0CJ | 2F-2CRLDA7EC121 | Keyboard PRIMAX KBRFCR RF2.4 Black English/Canadian French Acer logo |
| 17 | Czech/Slovak | 105 | DC.11211.026 DK.RF41P.0CK | 2F-2CRLDA7CS121 | Keyboard PRIMAX KBRFCR RF2.4 Black Czech/Slovak Acer logo |
| 18 | Spanish Latin | 105 | DC.11211.026 DK.RF41P.0CL | 2F-2CRLDA7LA121 | Keyboard PRIMAX KBRFCR RF2.4 Black Spanish Latin Acer logo |
| 19 | Spanish Latin | 105 | DC.11211.027 DK.RF41P.0CM | 2F-2CRLDA7LA122 | Keyboard PRIMAX KBRFCR RF2.4 Black Spanish Latin Acer logo, without battery |
| 20 | UKranian/Russian | 105 | DC.11211.026 DK.RF41P.0CN | 2F-2CRLDA7AE121 | Keyboard PRIMAX KBRFCR RF2.4 Black UKranian/Russian Acer logo |
| 21 | Russian | 105 | DC.11211.026 DK.RF41P.0CP | 2F-2CRLDA7RU121 | Keyboard PRIMAX KBRFCR RF2.4 Black Russian |
| 23 | Turkish(Q Type) | 105 | DC.11211.026 DK.RF41P.0CQ | 2F-2CRLDA7TQ121 | Keyboard PRIMAX KBRFCR RF2.4 Black Turkish Acer logo |
| 25 | Arabic/English | 105 | DC.11211.026 DK.RF41P.0CR | 2F-2CRLDA7AC121 | Keyboard PRIMAX KBRFCR RF2.4 Black Arabic/English Acer logo |
| 26 | Arabic/French | 105 | DC.11211.026 DK.RF41P.0CT | 2F-2CRLDA7AF121 | Keyboard PRIMAX KBRFCR RF2.4 Black Arabic/French Acer logo |
| 27 | Hungarian | 105 | DC.11211.026 DK.RF41P.0CS | 2F-2CRLDA7HU121 | Keyboard PRIMAX KBCR21 RF2.4 Black Hungarian Acer logo |
| 28 | Czech | 105 | DC.11211.026 DK.RF41P.0CU | 2F-2CRLDA7CZ121 | Keyboard PRIMAX KBRFCR RF2.4 Black Czech Acer logo |
| 29 | Hebrew | 105 | DC.11211.026 DK.RF41P.0CV | 2F-2CRLDA7HB121 | Keyboard PRIMAX KBRFCR RF2.4 Black Hebrew Acer logo |

## 12 Product photos

Black Keyboard+Black Mouse

Black Keyboard+Silver Mouse