

1. SCOPE

This document provides a specification for the **SEJIN** standard USB keyboard.

2. MECHANICAL PERFORMANCE

2.1 Key switch Operation

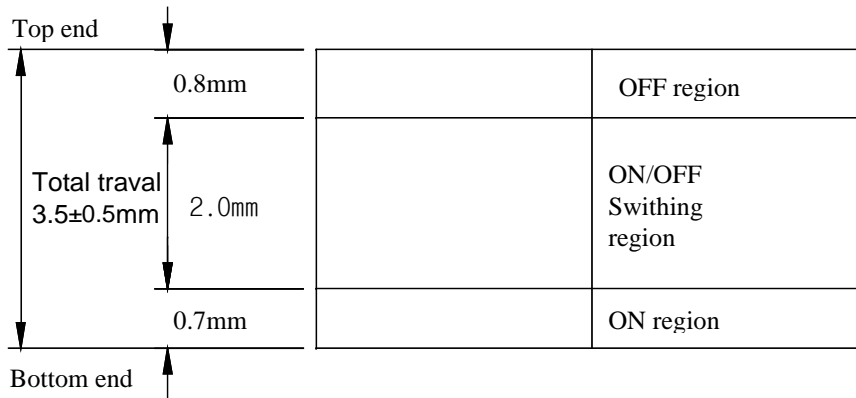
2.1.1 Operating system

Non - lock rubber tactile feeling.

2.1.2 Stroke

3.5 ± 0.5 mm with measuring load 200gf applied.

2.1.3 Operating Region



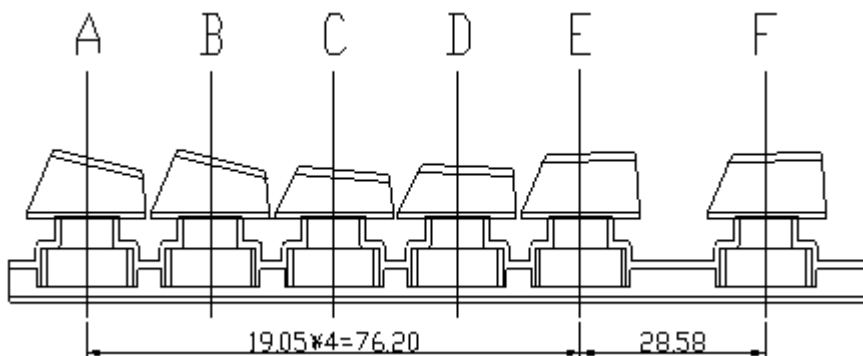
2.1.4 Operating force

The operating curve is defined to the following drawing and the relationship between the operating force and travel is provided. The operating force has a tolerance of 60 ± 25 gf

2.2 Operating feeling

No definite stickiness or other abnormality shall be allowed when force is applied with a finger to keytop center at the rate of 3 times on a second.

2.3 Construction and dimensions



Note: The applied keycap for "F" row is "E" row keycap.

2.4 Key top Height Variation

The key top height variation must not greater than 0.5mm when measured between the center to center of keys next to each other. The measurement will be performed with keys

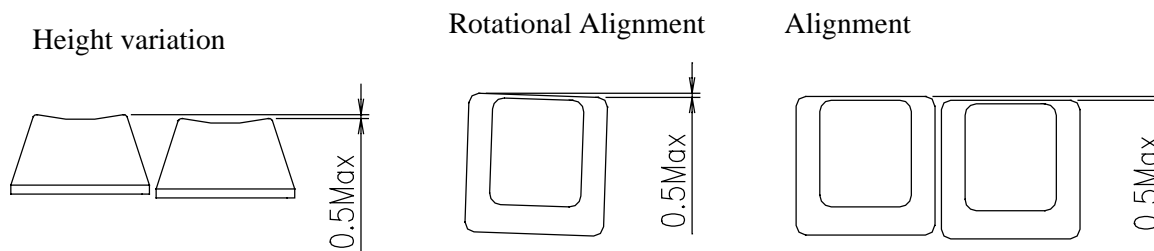
in the home positions.

2.5 Keytop Alignment

The key top alignment tolerances must not exceed 0.5mm when keytop measured between the center to center of keys next to each other. The measurement will be performed with keys in the home positions.

2.6 Rotational Alignment

The maximum rotation of key shall be less than 0.5mm as shown below.



2.7 End stroke strength

End stroke should withstand a static load of 500gf applied on the tip of the key stem in the perpendicular direction for 1 minute.

2.8 Keytop pulling strength

The keytop pull out force shall be 0.5Kg or more at normal temperature during initial conditions.

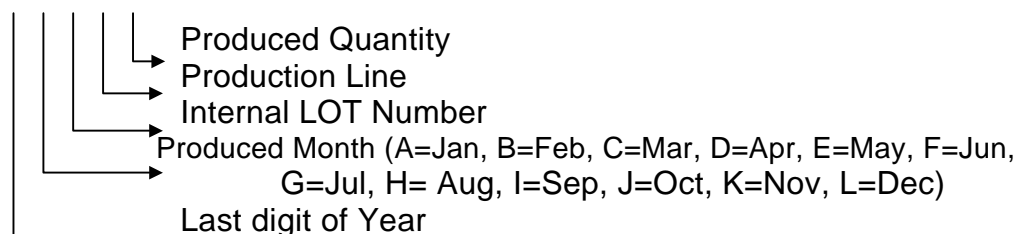
The keytop shall be not pulled out by an ordinary typing operations.

2.09 Back Label

The label will be squarely aligned and securely adhered with no voids or air bubbles. The materials used and the way of manufacture and installation will be such as to render the label "tamper-proof," that is, the label material and adhesive combination will be such that a label will be damaged, delaminated, or destroyed upon removal or attempted removal. The back label will contain MIC agency symbols, model number, part number, serial number and product of origin.

※ Serial Number Information

1 K A B 000001



3. WORKMANSHIP STANDARDS

3.1 Electrical Criteria

Electrical assemblies and components shall meet the requirements of IPC-A-610 and J-STD-001, Class-1.

3.2 Keycap Cosmetics

The legend of keycap has to be printed with LASER MARKING methodology by SEJIN standard and will have to pass the Sejin abrasion test.

4. ELECTRICAL REQUIREMENTS

4.1 Operating voltage range

DC $5V \pm 0.25$

4.2 Operating current

Max 100mA

4.3 Insulation resistance

More than 100M ohm at 250V DC

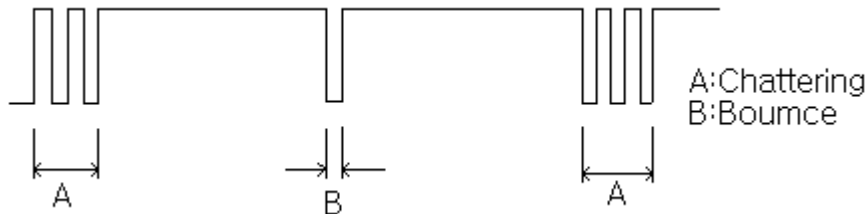
4.4 Contact resistance

2K Ω or less

4.5 Chattering and bounce

Operation force shall be applied according to the normal operating method at 5V DC, 5mA. There shall be no bounce and chattering within 10msec when it is measured using a specially prepared tester or a synchroscope.

※ Chattering and bounce are defined in the following diagram :



5. ENVIRONMENTAL REQUIREMENTS

The following specifications pertain to the keyboard assembly.

5.1 Operational ambient temperature and humidity

Temperature : 0 ~ 50°C

Humidity : 85%RH

5.2 Storage ambient temperature and humidity

Temperature : -20 ~ 60°C

Humidity : 95%RH

5.3 Shock

There shall be no abnormality in operation and appearance of the keyboard when an impact of 10G has been applied to the package keyboard. The testing method shall be in accordance with 213B of MIL-STD-202E

5.4 Vibration

The keyboard shall not be damaged electrically and mechanically when the following vibration has been applied to the packaged keyboard. The testing method shall be in accordance with 201A of MIL-STD-202E.

Frequency: 10~55Hz

Amplitude: 0.5mm

Direction of vibration: Direction X, Y and Z individually

Time of vibration: 2 hours

5.5 Drop Test (Non-Operating)

Purpose of test: To verify the keyboard's ability to withstand being dropped from lap and desk heights.

Test Parameters/Conditions: 25°C @ 50% R.H.

Standard: After test, If the keyboard is recoverable(able to be re- assembled), it is acceptable.

Packing Condition	Drop surface	Height	Test Description
Non-packing	Hard wood	70Cm	2 drops for each corner
	Carpet	70Cm	1drop for 6 surfaces
Inner box	Concrete	90Cm	1drop for 6 surfaces and 4 corners. (Totally 10drop)
Out box	Concrete	60Cm	1drop for 6 surfaces and 4 corners. (Totally 10drop)

5.6 Key life Test

- Standard: a. key-switch life: 10,000,000 cycles
 b. Test equipment : Plunger Type.
 Actuation speed : 4 times/sec
 Press pressure : 200 ± 50gf

5.7 Low Temperature Test

Check Method: Leave for 96 hours under -25 °C .
 Standard: The keyboard operates normally after the test.

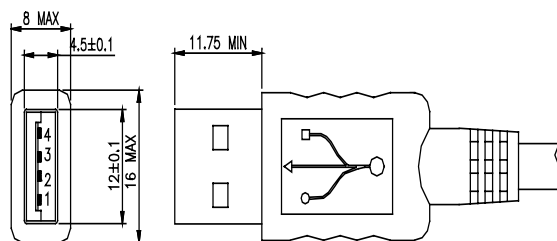
5.8 High Temperature Test

Check Method: Leave for 96hours under +65 °C .
 Standard: The keyboard operates normally after the test.

6. CONFIGURATION

The keyboard comprises the key switch section and signal processing circuit.
 The keyboard cable connects to the system with a USB connector.
 The following table shows the pin configuration and signal assignments.

Contact Number	Signal Name
1	VBUS
2	D-
3	D+
4	GND
Shell	Shield



Thanks for using SEJIN Keyboard (MODEL:SKR-4200U)

THE SEJIN Keyboard

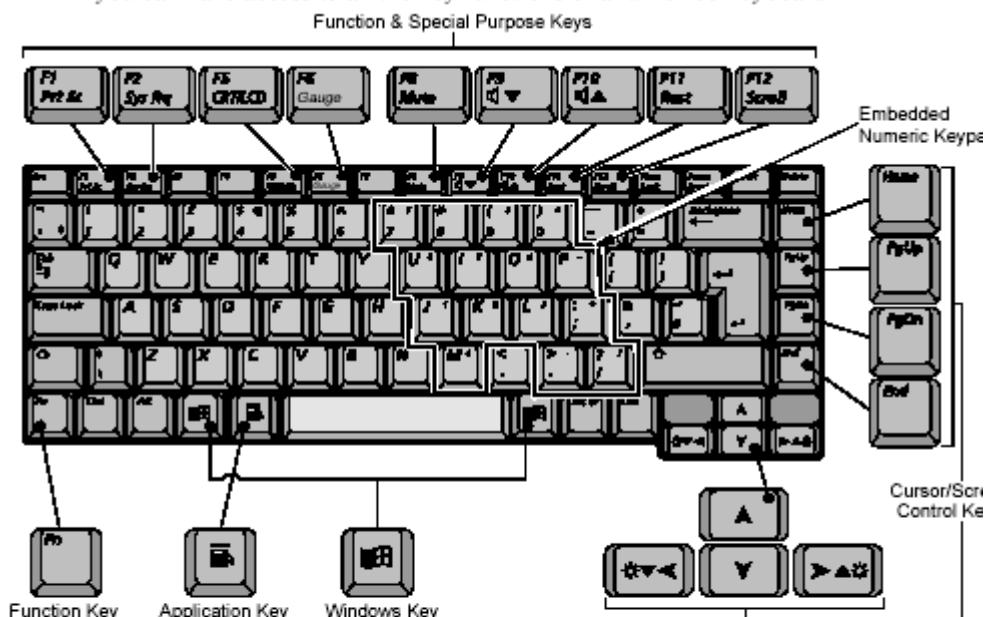
- Designed with the users in mind, it has a pleasant appearance and is Convenient to use.
- No extra power supply is required.
- It is compatible with the Microsoft Keyboard.

Mini-keyboard INSTALLATION

- Turn the power supply off to your computer.
- Check the USB keyboard/mouse port at the back of your computer and insert The connector at the end of the Key-board cables into the usb port .
- Turn the power supply on to your computer.

Using the Keyboard


you can have access to all the key functions of a full-sized keyboard.



Although the layout of the keys on your computer's keyboard is different from that on a desktop computer's keyboard, the keyboard feels like a full-sized keyboard when you use it.

The keys on the keyboard can be grouped into the following categories:

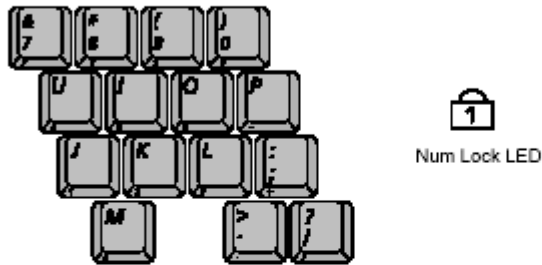
The keys on the keyboard can be grouped into the following categories:


- Full-sized Alphanumeric typewriter keys are arranged like a standard typewriter keyboard and are used for text entry. The Windows keys on either side of the spacebar open Windows menus and perform other special functions.
- Function keys, when pressed together with the  key, enable special functions.
- Cursor and Screen control keys move the cursor. They may perform other functions, depending on your software.




To clean the computer keyboard, use slightly damp cotton swabs. Scrub the keys and the surface around the keys.

Using the Numeric Keypad

Your keyboard includes a numeric keypad, which is a group of keys that you can set to type numbers and mathematical symbols, such as the plus sign. A number or symbol on the right corner of each keypad key shows its numeric function.



Press  to turn on the embedded numeric keypad. The numeric functions of the keypad are enabled and the Num Lock LED turns on. (See "Reading the System Status Lights" on page 20 for the location of the Num Lock LED.)

While the numeric functions are enabled, you can temporarily return a key to its normal function by pressing and the  key. For example to type the letter *m*, press  + , this operation displays the letter **m**.

To turn the numeric keypad off, press  again. The Num Lock LED turns off.

FCC NOTICE

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.
OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITION:
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED,
INCLUDING INTERFERENCE THAT MAY CAUSE UNDERSIRED
OPERATION.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures :

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer of an experienced radio/TV technician for help.

NOTE : The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.