Receiver MANUAL

(SWR-220U)

Sejin Electron Inc.

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 difference 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.

Contents

1 General Specification

1.1 USB Standard

The USB IR receiver is a bus powered composite device. It is complied with USB standard version 1.1 and HID standard version 1.1. The USB transmission speed is 1.5Mbps, which is low speed USB. The USB related spec is available on the web page http://www.usb.org/

1.2 System requirements

The followings are the requirements for using the USB IR receiver.

1. An available USB Downstream port with "A" type connector.
2. Operating system with USB compliant device driver and HID device support. (Windows 98 Second Edition /ME/2000/XP or lather version is recommended). Note: The Windows 98 Second Edition /ME/2000 and Windows XP are registered trademark of Microsoft Corporation.
3. One or more Application program for using consumer control buttons. (Without the application program, only a few remote control buttons, Keyboard and Mouse operation will work.)

1.3 Electrical Specification

Connector	"A" Type USB connector
USB speed	Low speed (1.5MBPS)
Operating voltage range	4.4~5.5V
Operating current	Max 100mA
Operating temperature	0 ~ 40℃
Storage temperature	-40 ~ 60℃
Operating humidity	0~90% RH non-condensing
Storage humidity	0~95% RH non-condensing

2 Receiver settings

2.1 User ID setting

There are two options for user ID setting. First one is in case the receiver has an optional serial EEPROM.

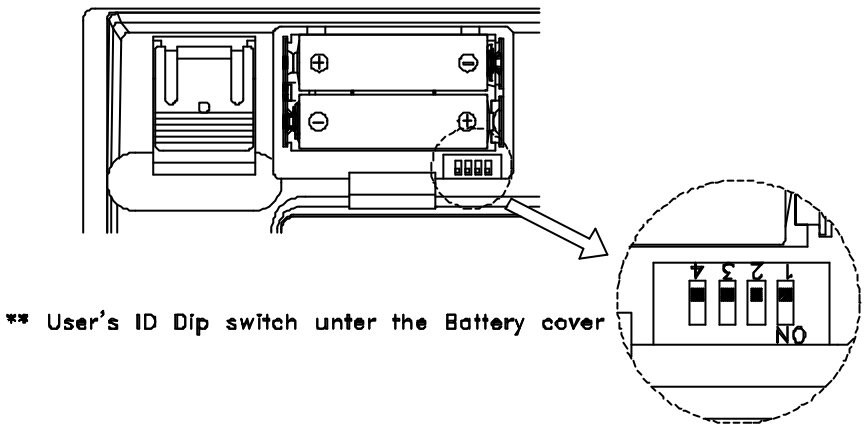
Second one is in case the receiver has no the optional serial EEPROM.

2.1.1 User ID setting incase an EEPROM equipped on the receiver

If the receiver has an optional serial EEPROM on the receiver board, the receiver keeps user ID even though the system power down.

User ID setting procedure:

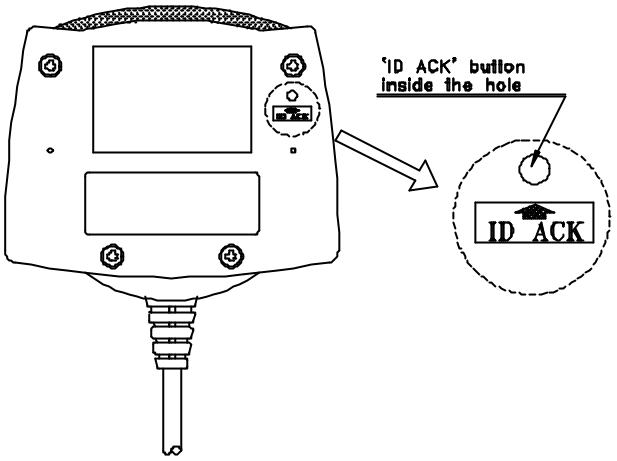
1. Set the User ID 4 bit Dipswitch located under battery cover on the keyboard side after removing batteries. To use both the keyboard and the remote control with single receiver, the user must set the same user ID number for both on the keyboard and on the remote.



** User's ID Dip switch unter the Battery cover

2. Press any key or button a few times to discharge internal capacitor and than reinsert batteries.

3. Push the `ID ACK' button located inside the small hole on the bottom side using an appropriate pin, the DATA indication LED will blink in every a second.



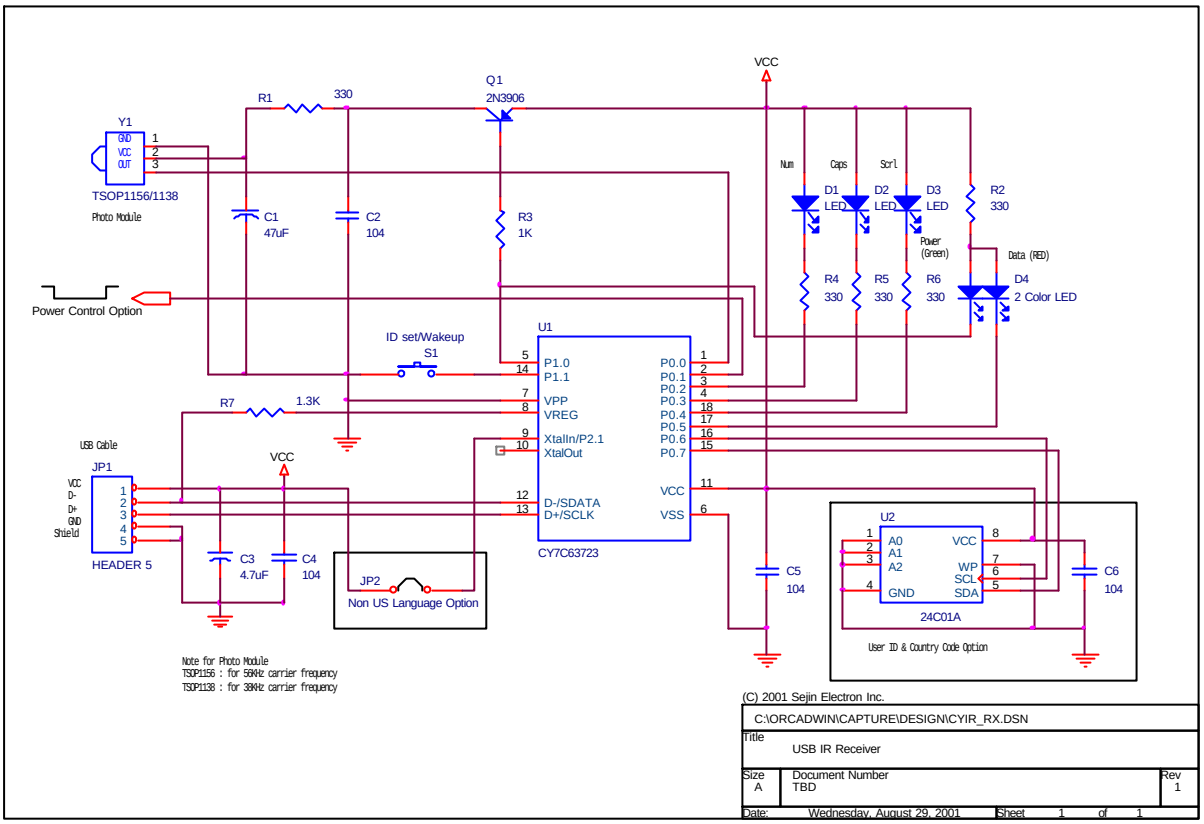
4. Aim the keyboard to the IR lens of Receiver and press any key other than the Left-Control, Left-Shift, Right-Shift and Esc key or move mouse. Alternately, aim the remote control to the IR lens of Receiver and press any button. The four-key combination, Left-Control, Left-Shift, Right-Shift and Esc key is used to enter Matrix ID setting and Country code setting mode.
5. When a valid input detected the receiver stores the new user ID into the serial EEPROM. Once the user ID setting is done, the receiver automatically returns back to its normal operation mode.

2.1.2 User ID setting incase no EEPROM equipped on the receiver

1. If the receiver has no the optional serial EEPROM or if the stored data and the CRC value in the EEPROM is not valid, the receiver blinks the DATA indication LED in every a second when Power up time. Operate any input device, keyboard, mouse or remote control, the receiver no longer blinking the DATA indication LED except a valid IR data indication blinking. When an IR data received except the data for Left-Control, Left-Shift, Right-Shift and Esc key, the receiver set the user ID with the user ID number in the first received IR data packet as a default user ID. Once the user ID has been set, the receiver receives only the data that has as same user ID number as its internal user ID number. The four-key combination, Left-Control, Left-Shift, Right-Shift and Esc key is used to enter Matrix ID setting and Country code setting mode. When a user use both the keyboard and the remote control with a receiver, the user must set the same user ID number on the keyboard and on the remote. The stored user ID number will be lost when system power down. Every power on time it

3 Schematic diagram

3.1 Schematic diagram with 18 Pin DIP type package



3.2 Photo Module for different carrier frequencies

A Vishay Telefunken' s TSOP1156 photo module should be used for Sejin 4PPM wireless products with 56KHz carrier frequency as an IR detector. A Vishay Telefunken' s TSOP1138 photo module should be used for Sejin 4PPM wireless products with 38KHz carrier frequency as an IR detector.

The data sheets for the components are available on below web page.

http://www.vishay.com/brands/telefunken/photomods.html

Note: In order not to reduce the sensitivity of the photo module by power line noise or ripple, the 47uF capacitor C1 on the schematic diagram must be placed as close as possible to the GND pin and the VCC pin of the photo module.

3.3 Language option jumper setting

When the optional serial EEPROM is not equipped on the receiver, the jumper JP2 on the schematic diagram is used for matrix ID selection. In the case, the Country code value in the HID descriptor table on chapter is always zero, which indicates not localized. The jumper JP2 must be ON for all non-US language version keyboards except the keyboards that use US matrix sheet. The jumper JP2 must be removed for the keyboards that use US matrix sheet, which are currently US and Chinese language version. When the optional serial EEPROM is equipped on the receiver, the non-US language option jumper JP2 is ignored.