

# eny Users' Manual

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# About This Manual

This document is the users' manual for "eny" system, which consists of the "eny button" (RF transmitter) and "eny receiver" (the RF receiver).

The following items are described in the document.

- System configuration
- How to operate
- Communication Interface

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## FCC CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: 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 communications. 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 or an experienced radio/TV technician for help.

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines. This equipment has very low levels of RF energy that is deemed to comply without maximum permissive exposure evaluation (MPE).

# System Configuration

The configuration of “eny” system is shown in Figure 1.

Pressing the “eny button” generates electricity and become active for a while ( less than 5[ms] ).

During the active time the button can transmit and receive RF signal.

The “eny receiver” should be plugged into PC or other host computer via USB and recognized as Virtual COM port (VCP).

The receiver can communicate with the “eny button” while the button is active.

The operation is done in ISM frequency (2.4GHz band) and the protocol is “eny” original.

“eny button” does not need the power supply, and “eny receiver” requires 5V via USB.

The ID of the connected “eny button” will be output on the terminal software (Putty, Teraterm etc.).

The application should be implemented in the host computer to be triggered by the signal from “eny button”.

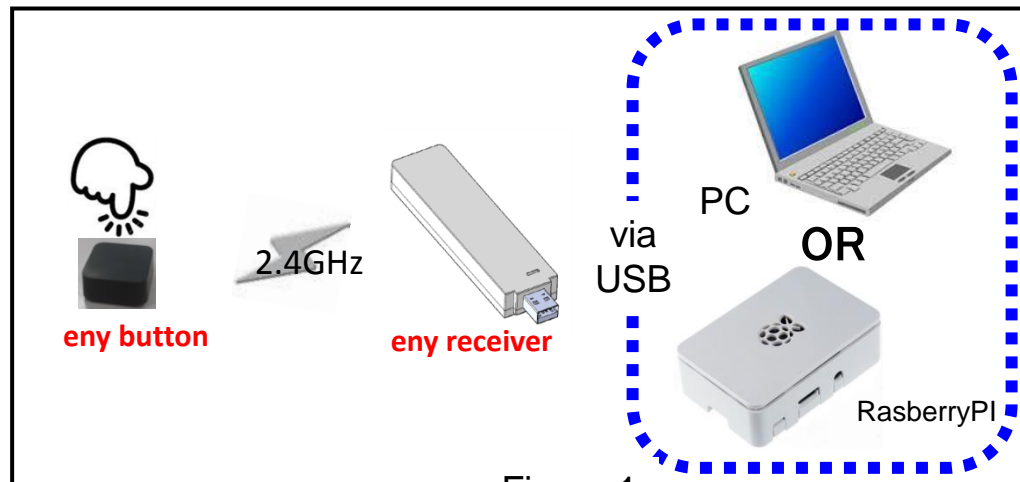
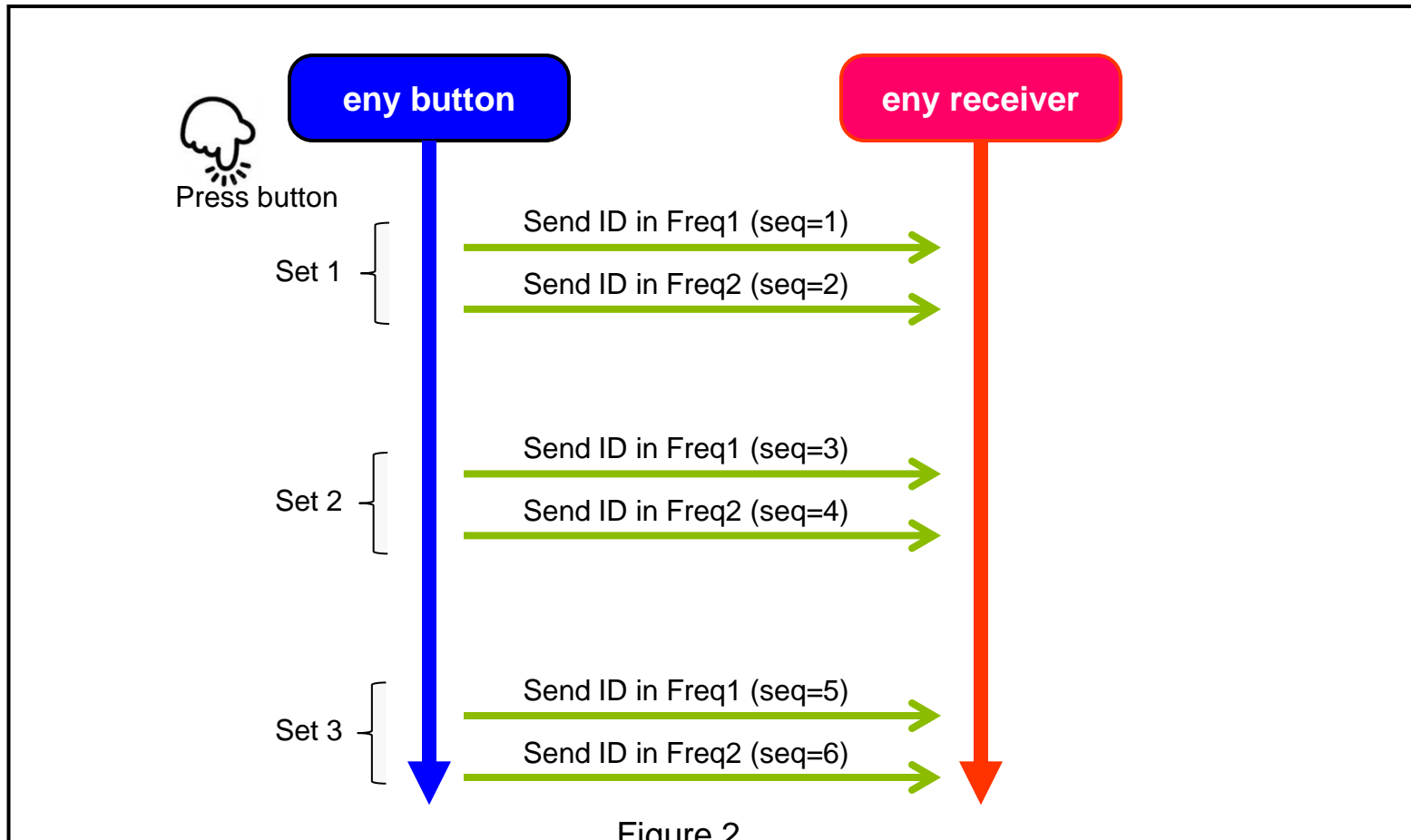


Figure 1

# Sequence Between Button And Receiver

The sequence between “eny button” and “eny receiver” is shown in Figure 2. The button makes three sets of ID transmission at a maximum. Each set contains two transmissions in different frequencies, Freq1 and Freq2. This mechanism can improve the robustness of the communication. There is no simultaneous radio frequency output of Freq1 and Freq2.



# Communication I/F In Host Computer

Command I/F between “eny receiver” and the host computer is shown in Figure 3.  
 The communication between “eny button” and “eny receiver” is established based on whitelist (\*1).  
 Use “pair” command to handle the whitelist called “pair table”.

## Command:

Command	Description	Parameter	Response	Note
pair view	Shows the content of the pair table.	-	[[Index]] : [ID] [[Index]] : [ID] ... where Index : 0 - 31, decimal ID : 8 digits, hexadecimal	
pair add [ID]	Adds ID of the specified eny button to the pair table.	ID : 8 digits, hexadecimal	[Result code] [Command code] ([Description]) where Result code: 00 (Success) 02 (Too few arguments) 03 (Too many arguments) 05 (Parameter invalid) 07 (The pair table is full) Command code: Internal code	ID will be registered to the lowest unused index.
pair del [Index]	Deletes ID of the specified eny button from the pair table.	Index : 0 - 31, decimal		
pair reset	Clear all IDs in the pair table.	-		
get_id	Shows the RX ID.	-	[RX_ID] (RX_ID(GET))	
help	Shows command list.	-	Command list	

Figure 3

**Note:**  
 - Receiver outputs the button information in ASCII text via USB when it receives the signal successfully.  
 e.g. [Button ID] [Sequence No.] [Cumulated No.] [Channel No.]

\*1 : A whitelist is a list or register of entities that are being provided a particular access. Entities on the list will be accepted, otherwise denied.

# Communication I/F In Host Computer

Serial port settings :

Speed	:115200	[bps]
Data bits	:8	[bits]
Stop bits	:1	[bit]
Parity	:None	
Flow control	:None	

Setting example (PuTTY):

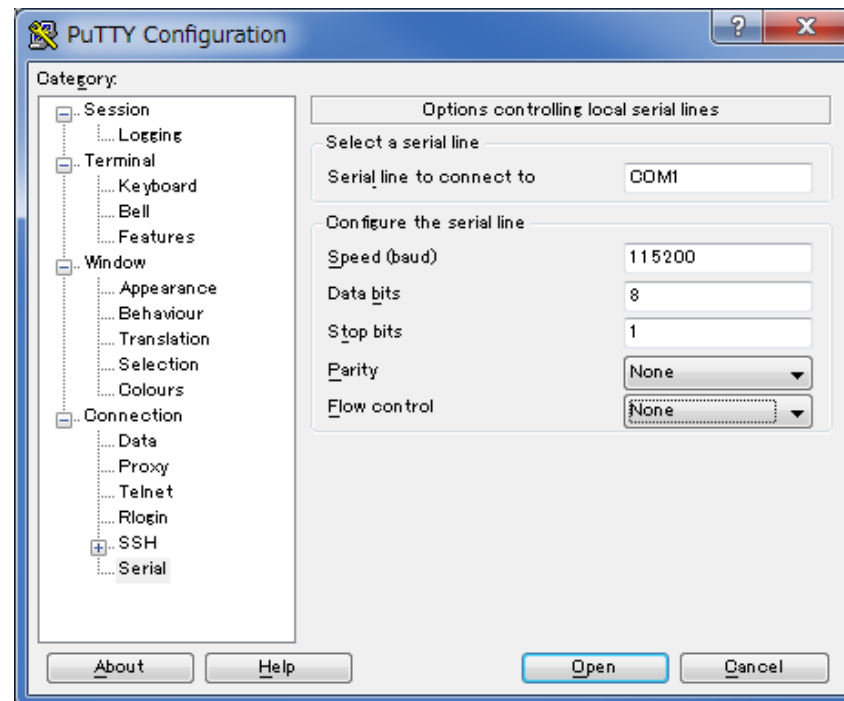
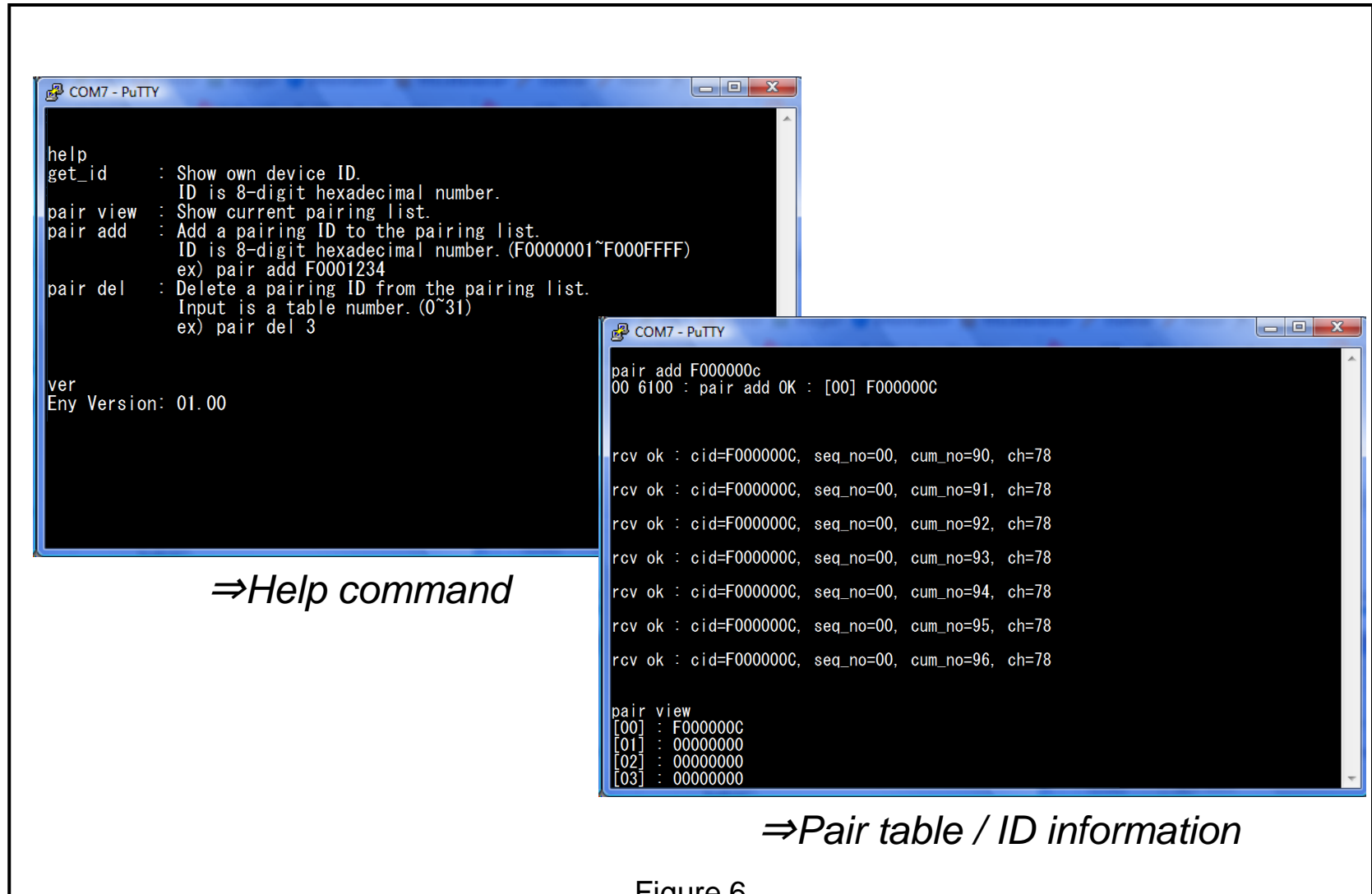


Figure 4

# Communication I/F In Host Computer

Command execution examples :



The image displays two PuTTY terminal windows. The first window, titled 'COM7 - PuTTY', shows the output of the 'help' command, listing various commands and their functions. The second window, also titled 'COM7 - PuTTY', shows the execution of 'pair add F00000c' followed by 'pair view', displaying the resulting pairing table.

```
COM7 - PuTTY
help
get_id   : Show own device ID.
          ID is 8-digit hexadecimal number.
pair view : Show current pairing list.
pair add  : Add a pairing ID to the pairing list.
          ID is 8-digit hexadecimal number. (F0000001~F000FFFF)
          ex) pair add F0001234
pair del  : Delete a pairing ID from the pairing list.
          Input is a table number. (0~31)
          ex) pair del 3

ver
Eny Version: 01.00
```

*⇒ Help command*

```
COM7 - PuTTY
pair add F00000c
00 6100 : pair add OK : [00] F000000C

rcv ok : cid=F000000C, seq_no=00, cum_no=90, ch=78
rcv ok : cid=F000000C, seq_no=00, cum_no=91, ch=78
rcv ok : cid=F000000C, seq_no=00, cum_no=92, ch=78
rcv ok : cid=F000000C, seq_no=00, cum_no=93, ch=78
rcv ok : cid=F000000C, seq_no=00, cum_no=94, ch=78
rcv ok : cid=F000000C, seq_no=00, cum_no=95, ch=78
rcv ok : cid=F000000C, seq_no=00, cum_no=96, ch=78

pair view
[00] : F000000C
[01] : 00000000
[02] : 00000000
[03] : 00000000
```

*⇒ Pair table / ID information*

Figure 6

# LED Status On “eny receiver”

LED status on “eny receiver” is shown in Figure 6.

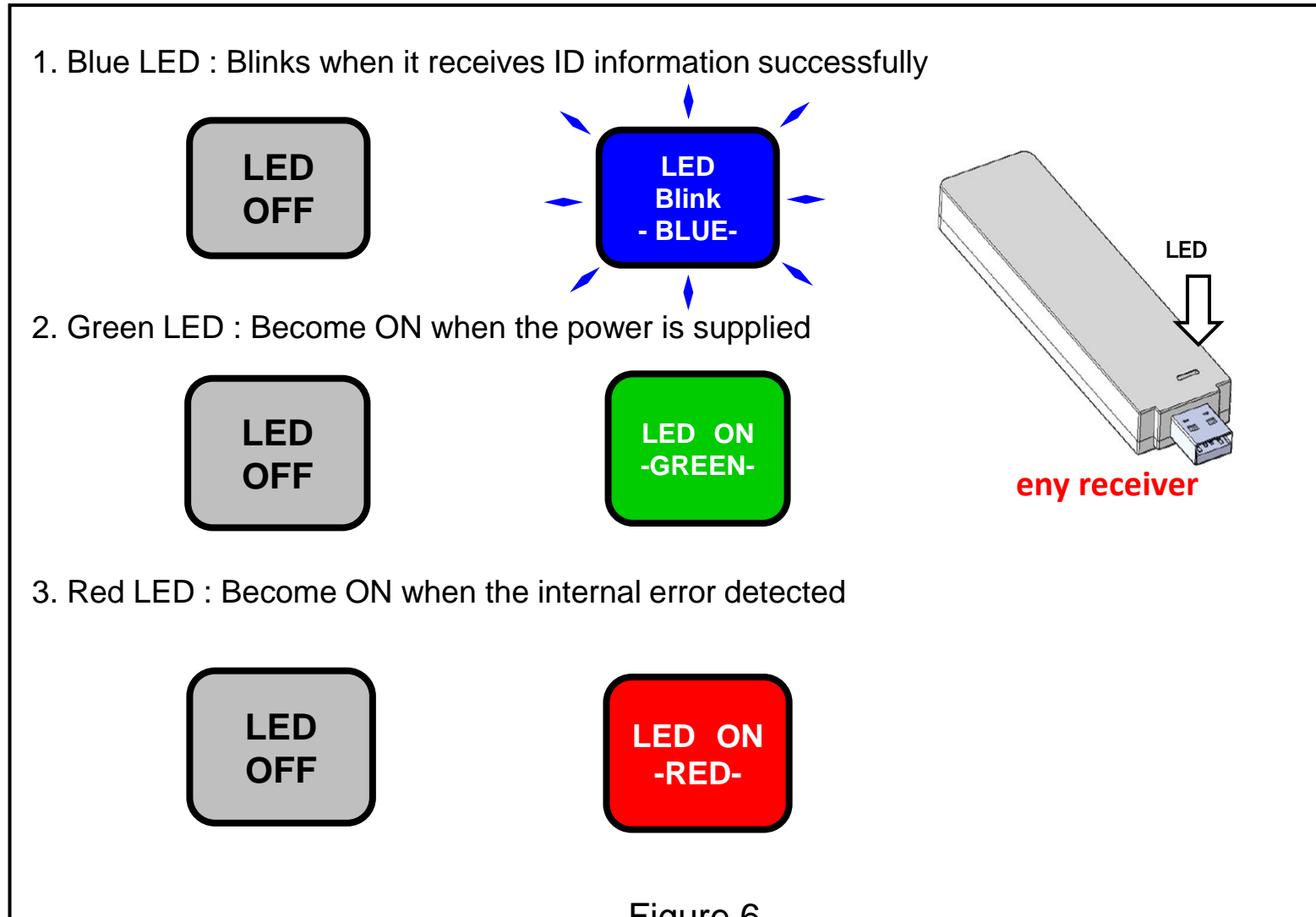


Figure 6



# Disclaimer

Please note that the information or the program it in this document may be changed or updated without notice. For any damages caused by these changes and updates, we are not responsible.