User's Manual

Preparation day : 30/July/2009

Product Name : ＵＳＢ ＷＩＲＥＬＥＳＳ ＵＮＩＴ

Model Name (Model Number) : １５００＃００-Ｂ

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Revision History.

Date	Edition number	Revision content	Writer
30/July/2009	First version	First version publication	T.Ogawa

■On safety design

Though our company has paid close attention to quality, semi-conductive products can malfunction and fail.
Our company has gone to great lengths to create a safe product which does not cause any injury accidents, fire accidents, public harm, etc., and incorporated safety features such as fire prevention and malfunction prevention into our design.

■On exemption from obligatory matter

The company is not responsible for damages resulting from natural disaster, actions by a third person and other accidents, deliberate misuse or negligence by the customer, and damages due to abnormal use.
The company is not responsible for any incidental damage caused by our product (loss of business, loss of the business profit, loss and/or changes in memory content, etc.).
The company is not responsible for all other damages caused through failure to abide by the description of this material.
The company is not responsible for damages resulting from connection with equipment or combination with the software for which we are not concerned with.
Finally, our company is not responsible for damages resulting from error from this material.

■On equipment certification

Following matters may be punishable by law:

- If any modification is made to this product.
- If the label of proof is removed from the product.

Contents

1. Application range

1-1 Application

This specification is applied to the following.

Product Name : USB WIRELESS UNIT
Model Name : 1500#00-B
(Model Number)

1-2 Applicable with

Sony Computer Entertainment 『Playstation3』

※However, it must be used with model name 1500#00-A as a set.

1-3 Application standard

- Wireless Telegraphy Act Article 38 Section 2 - 1 - 19
- FCC Part15 Subpart C
- EN300 328

2. General specification

2-1 Shape and dimension

Dimension : Approximately 20mm× 69mm× 8mm
Mass : About 9g

2-2 Operational temperature and humidity range (In operation)

Temperature : 0℃～＋40℃
Humidity : 20～25%RH
(Assuming there is no dew condensation.)

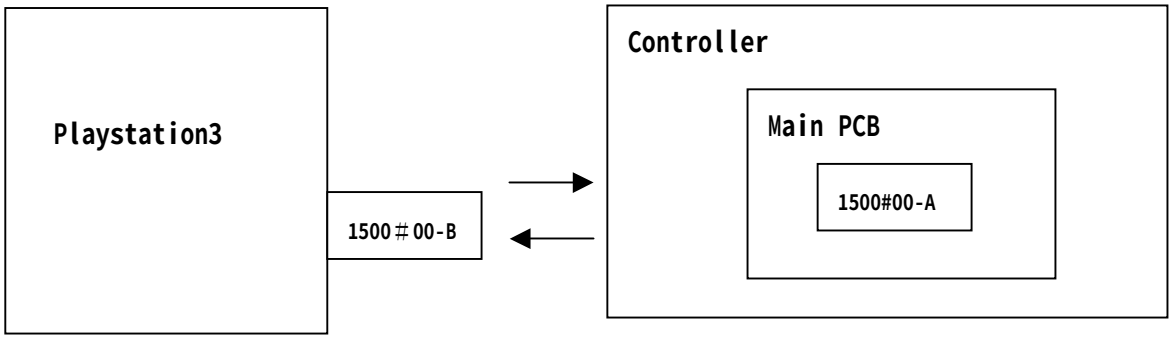
2-3 Storage temperature and humidity range (In storage)

Temperature : -25℃～＋60℃
Humidity : 20～85%RH
(Assuming there is no dew condensation.)

2-4 Function

This product is a USB port connective, radio unit.
It is necessary to be used with product model number 1500＃00-A as a set.
By setting the unit, the controller becomes operational with the Sony Computer Entertainment『Playstation3』.

2-5 System constitution



It is connected to the USB port.

2-6 Connection unit number

1500#00-B communicates one-to-one with 1500#00-A.

A maximum 7 sets of 1500＃00-A and 1500＃00-B, can be connected to one 『Playstation3』.

Also, in the presence of multiple 『Playstation3』, a maximum 25 sets of 1500#00-A and 1500＃00-B can be connected simultaneously.

2-7 Power

Input voltage ： DC+5.0V (Supply from the USB port)
Consumption current :30mA (In normal operation)

2-8 Communication range

The communication range of the radio communication is within 10m.

2-9 Appearance and name of each part

3．Usage

3-1　Connection method

① It is connected to the USB port of the Playstation3 console.
② Communication indicator LED flashes on and off.
(Light will turn on and off every 250msec intervals.)
③ The controller with 1500＃00-A mounted is supplied with power.
(Power is supplied from 2 batteries)
④ When a controller with 1500＃00-A mounted establishes communication the Communication indicator LED either stays lit or continues to flashes on and off.
(The flashing, in this case, occurs at every 100msec intervals.)

3-2　Communication indicator LED function

The relationship between the communication indicator LED and the system is as follows.

①Lights-out (Not Flashing)

It is not connected with Playstation3 USB port.

②Flashing on and off in 250msec intervals

The controller with 1500＃00-A mounted is not supplied with the power, or the communication has not yet been established.

③Continually Lit

The controller with 1500＃00-A mounted has established communication and there is sufficient power left in the battery.
(The voltage of the 2 batteries are over 2.0V.)

④Flashing on and off in 100msec intervals

The controller with 1500#00-A mounted has established communication but there is not sufficient power left in the battery.
(The voltage of the 2 batteries is under 2.0V.)

4. USB function

4-1 Specification

・It is designed for USB2.0 Full speed.
・It communicates in HID class.

4-2 Parameter of each descriptor

4-2-1 Device descriptor

Value	Field	Description
0x12	bLength	018
0x01	bDescrType	STD_DEVICE(1)
0x0200	bcdUSB	02.00
0x00	bDevClass	Undefined class
0x00	bDevSubClass	Subclass undefined
0x00	bDevProtocol	Protocol undefined
0x40	bMaxPktSize0	064
0x0f0d	idVendor	03853
0x0013	idProduct	00019
0x0001	bcdDevice	00.01
0x01	iManufacturer	001
0x02	iProduct	002
0x00	iSerialNumber	000
0x01	bNumbConfigs	001

4-2-2 Configuration descriptor

Value	Field	Description
0x09	bLength	009
0x02	bDescrType	STD_CONFIGURATION(2)
0x0029	wTotalLength	00041
0x01	bNumInterfaces	001
0x01	bConfigValue	001
0x00	iConfiguration	000
0x80	bmAttributes	BusPowered: YES
		SelfPowered: NO
		RemWakeup: NO
0x32	MaxPower	100mA

4-2-3 Interface descriptor

Value	Field	Description
0x09	bLength	009
0x04	bDescrType	STD_INTERFACE(4)
0x00	bInterfaceNo	000
0x00	bAltSetting	000
0x02	bNumEndpoints	002
0x03	bIntClass	HID
0x00	bIntSubClass	Subclass undefined
0x00	bIntProtocol	Protocol undefined
0x00	iInterface	000

4-2-4 Endpoint descriptor

```
==========================================
Value   Field           Description
------------------------------------------
0x07    bLength         007
0x05    bDescrType      STD_ENDPOINT(5)
0x81    bEndpAddress    129
0x03    bmAttributes    xfer type: INTR(3)
0x0040  wMaxPktSize     00064
0x0a    bInterval       010


==========================================
Value   Field           Description
------------------------------------------
0x07    bLength         007
0x05    bDescrType      STD_ENDPOINT(5)
0x02    bEndpAddress    002
0x03    bmAttributes    xfer type: INTR(3)
0x0040  wMaxPktSize     00064
0x0a    bInterval       010
```

4-2-5 HID (0x21) descriptor

```
==========================================
Value   Field           Description
------------------------------------------
0x09    bLength         009
0x21    bDescrType      HID(0x21)
0x0110  bcdHID          01.10
0x00    bCountryCode    000
0x01    bNumDescriptors 001
0x22    bDescrType      HID_REPORT(0x22)
0x0070  wDescrLength    00112
```

4-2-6 HID report (0x22) descriptor

```
05 01           USAGE_PAGE (Generic Desktop Controls)
09 05           USAGE (Game Pad CA)
a1 01           COLLECTION (Application)
15 00             LOGICAL_MIN (0)
25 01             LOGICAL_MAX (1)
35 00             PHYSICAL_MIN (0)
45 01             PHYSICAL_MAX (1)
75 01             REPORT_SIZE (1)
95 0d             REPORT_COUNT (13)
05 09             USAGE_PAGE (Button)
19 01             USAGE_MIN (Button 1)
29 0d             USAGE_MAX (Button 13)
81 02             INPUT
95 03             REPORT_COUNT (3)
81 01             INPUT
05 01             USAGE_PAGE (Generic Desktop Controls)
25 07             LOGICAL_MAX (7)
46 3b 01          PHYSICAL_MAX (315)
75 04             REPORT_SIZE (4)
95 01             REPORT_COUNT (1)
65 14             UNIT
09 39             USAGE (Hat switch DV)
81 42             INPUT
65 00             UNIT
95 01             REPORT_COUNT (1)
81 01             INPUT
26 ff 00          LOGICAL_MAX (255)
46 ff 00          PHYSICAL_MAX (255)
09 30             USAGE (X DV)
09 31             USAGE (Y DV)
09 32             USAGE (Z DV)
09 35             USAGE (Rz DV)
75 08             REPORT_SIZE (8)
95 04             REPORT_COUNT (4)
81 02             INPUT
06 00 ff          USAGE_PAGE (Vendor-defined)
09 20             USAGE (0x20)
```

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09 21              USAGE (0x21)
09 22              USAGE (0x22)
09 23              USAGE (0x23)
09 24              USAGE (0x24)
09 25              USAGE (0x25)
09 26              USAGE (0x26)
09 27              USAGE (0x27)
09 28              USAGE (0x28)
09 29              USAGE (0x29)
09 2a              USAGE (0x2a)
09 2b              USAGE (0x2b)
95 0c              REPORT_COUNT (12)
81 02              INPUT
0a 21 26           USAGE (0x9526)
95 08              REPORT_COUNT (8)
b1 02              FEATURE
c0               END_COLLECTION
```

4-3 Data format

ByteOffset	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
0	R2 (※1)	L2 (※1)	R1 (※1)	L1 (※1)	△ (※1)	○ (※1)	× (※1)	□ (※1)
1	Reserved (※2)	Reserved (※2)	Reserved (※2)	PS (※1)	R3 (※3)	L3 (※3)	START (※1)	SELECT (※1)
2	Reserved (※2)	Reserved (※2)	Reserved (※2)	Reserved	D-PAD			
3	Analog Left Stick X Axis (※4)							
4	Analog Left Stick Y Axis (※4)							
5	Analog Right Stick X Axis (※4)							
6	Analog Right Stick Y Axis (※4)							
7	Analog Right (※5)							
8	Analog Left (※5)							
9	Analog Up (※5)							
10	Analog Down (※5)							
11	Analog △ (※5)							
12	Analog ○ (※5)							
13	Analog × (※5)							
14	Analog □ (※5)							
15	Analog L1 (※5)							
16	Analog R1 (※5)							
17	Analog L2 (※5)							
18	Analog R2 (※5)							

D-Pad	Direction	Note
0	Up	
1	Right-Up	Set when Right and Up are depressed together
2	Right	
3	Right-Down	Set when Right and Down are depressed together
4	Down	
5	Left-Down	Set when Left and Down are depressed together
6	Left	
7	Left-Up	Set when Left and Up are depressed together
8～15	Center	

(※1) Bits values of the digital output button are as follows.
Release：0 Depression：1
(※2) The bit value of Reserved is made to be 0.
(※3) Bit value of the digital output button of the un- mounting is made to be 0.
(※4) Analog value of the analog output button of the un- mounting is made to be 0x80.
(※5) Analog values of the button without the analog output are as follows.
Release：0x00 Depression：0xff

5. Radio specification

5-1 General specification

Parameter	Value/Note
Modulation system	GFSK
Spectrum diffusion process	Frequency hopping
Number of channels	25ch
Frequency range	2405MHz～2477MHz
IC transmission output	0dBm[Max.]
Data rate	1Mbps[Max.]
Rock crystal vibrator frequency	16MHz
Operating voltage	DC+5.0V (Supply from the USB port)

5-2 Channel frequency

Channel	Frequency [MHz]
1	2405
2	2408
3	2411
4	2414
• • • •	
22	2468
23	2471
24	2474
25	2477

5-2 Antenna

Parameter	Value/Note
Type	Monopole antenna
Composition	Pattern antenna
Gain	1.92 dBi[Max.]

6. Precautions for each standard

6-1 FCC ClassB

CAUTION:
Any 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.

6-2 FCC (15.19) /IC (RSS-210 Low Power Device)

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

6-3 IC and FCC (Radio)

RF exposure compliance

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