

User Manual

2.4GHz RF Keyboard



Product Name: 2.4GHz RF Keyboard

Product No.: PKBJE03G2403-0

Model No.: TSJE-2401

Version: Ver. 1.0

Date: 2008/11/20

Description:

This RF Keyboard is a GFSK (Gaussian Frequency Shift Key) Transmitter for the frequency band 2.4 to 2.483 GHz ISM band. The RF Keyboard offers a low power consumption, multi-channel, and data rates up to 1M Kbps, full-integrated Frequency synthesizer and a high efficiency power amplifier to drive a loop antenna. A special circuit design and an unique power amplifier design are used for longer distance requirements.

This RF Keyboard specification applies 88 key membrane keyboard with a mechanical trackball, 8 multimedia keys, and modern scroll wheels which are fully compatible with IBM PC AT system. Its scissor switch is generally quiet; the keys require little force to press. This sort of keyboard technology is mainly and commonly used in laptops.

1.1. Batteries: 2AA batteries are designated to be used in RF Keyboard to support up to 3 months in terms of normal usage.

1.2. Restricted Substances and Environmental Requirements: all the materials and manufacturing process used to product RF Keyboard must comply to RoHS requirements. We state that all the materials used in the product specification complies to RoHS requirements.

1.2.3.

1.3. Ergonomics Requirements:

1 This product was designed to be ergonomics for all users.

1.3.1 The ergonomics keyboard design is to fit into users' palms to reduce the discomfort caused by long time usage.

1.3.2 The symmetrical design is to be fit for both left-handed and right-handed users to reduce the discomfort or strain caused to users.

1.3.3 Every key designed on the RF Keyboard is to be designed easy to reach for users for easy usability and reduce strain.

2 Product Functional Requirements:

1.2.4.1 Operation System: needs to be functional when working under Customer System.

1.2.4.2 Interface: Receiver needs to be working under USB 1.1 and 2.0 Interface.

1.2.4.3 Range Requirements: the transmission of the RF Keyboard shall be at least 30-50 meters with optical filter in place.

1.2.4.4 RF Protocol: Using TopSeed Standard RF protocol with HID Driver.

1.2.4.5 Frequency Range: 2.4 to 2.483 GHz (16 multi channels and 65535 ID channels for Keyboard)

1.2.4.6 Battery life: 2AA batteries to provide at least 3 months normal usage.

1.2.5 Detailed Product Specification – RF Keyboard

1.2.5.1 2.4GHz RF Keyboard

Item	Standard Specification		Option
RF Characteristics (TX)	Frequency Range	2.428GHz-2.444GHz	
	Modulation	GFSK	---
	Channel Spacing	1 MHz	---
	Channel No.	17	---
	Channel I.D	65535	
	TX Power	1 mW	
	Transmission rate	64K bps	
	TX frequency deviation	+/- 100 KHz	
	Frequency tolerance	+/- 20ppm	
	Distance of Transmission	30 m min.	
	Antenna type	PCB Track	
Input power	AA*4 DC 3V batteries.		---
Power Consumption	working mode	15mA Max	
	saving mode	100uA	
Power	Battery	AA*2 DC 3V batteries	
	Batter Life	3 months	
Electrical Performance	Supply Voltage	DC 2.2V ~ 3.4V	---
	Button	52	---
Mechanical Performance	Dimension	303.27 x 180.88 x 28 mm	---
	Key Operating Force	105 ± 40 gf	
	Operating Stroke	0.9 ± 0.1 mm	---
	Keytop Material	Silicon Rubber	---

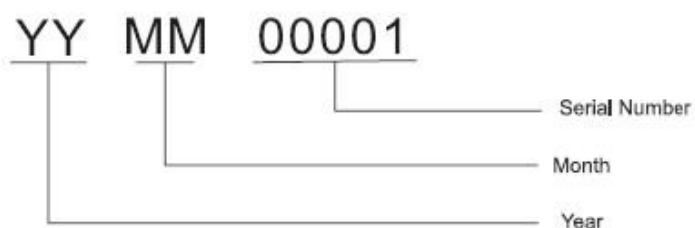
Physical Description and Specification – 2D Drawing





Physical Description and Specification – Label Drawing


















W40mm
白色印刷
紙175#
光
要符合Topseed Green技術標準
001及Topseed客戶環保標準
印刷內容請依照樣品為準


















1.2.5.2 RF Keyboard key buttons and codes

item	Function Key	Icon	Key Code under Zv Mode		
			HID Code page	HID Usage	HID Button Usage ID
1	a and A		0x01	0x07	0x04
2	b and B		0x01	0x07	0x05
3	c and C		0x01	0x07	0x06
4	d and D		0x01	0x07	0x07
5	e and E		0x01	0x07	0x08
6	f and F		0x01	0x07	0x09
7	g and G		0x01	0x07	0x0A
8	h and H		0x01	0x07	0x0B
9	i and I		0x01	0x07	0x0C
10	j and J		0x01	0x07	0x0D
11	k and K		0x01	0x07	0x0E
12	l and		0x01	0x07	0x0F
13	m and M		0x01	0x07	0x10
14	n and N		0x01	0x07	0x11
15	o and O		0x01	0x07	0x12
















1.2.5.2 RF Keyboard key buttons and codes (conti.)

item	Function Key	Icon	Key Code under Zv Mode		
			HID Code page	HID Usage	HID Button Usage ID
16	p and P		0x01	0x07	0x13
17	q and Q		0x01	0x07	0x14
18	r and R		0x01	0x07	0x15
19	s and S		0x01	0x07	0x16
20	t and T		0x01	0x07	0x17
21	u and U		0x01	0x07	0x18
22	v and V		0x01	0x07	0x19
23	w and W		0x01	0x07	0x1A
24	x and X		0x01	0x07	0x1B
25	y and Y		0x01	0x07	0x1C
26	z and Z		0x01	0x07	0x1D
27	1 and !		0x01	0x07	0x1E
28	2 and @		0x01	0x07	0x1F
29	3 and #		0x01	0x07	0x20
30	4 and \$		0x01	0x07	0x21

1.2.5.2 RF Keyboard key buttons and codes (conti.)

item	Function Key	Icon	Key Code under Zv Mode		
			HID Code page	HID Usage	HID Button Usage ID
31	5 and %		0x01	0x07	0x22
32	6 and ^		0x01	0x07	0x23
33	7 and &		0x01	0x07	0x24
34	8 and *		0x01	0x07	0x25
35	9 and (	0x01	0x07	0x26
36	0 and)		0x01	0x07	0x27
37	ENTER		0x01	0x07	0x28
38	ESCAPE		0x01	0x07	0x29
39	Backspace		0x01	0x07	0x2A
40	Tab		0x01	0x07	0x2B
41	Space		0x01	0x07	0x2C
42	- and _		0x01	0x07	0x2D
43	= and +		0x01	0x07	0x2E
44	[and {		0x01	0x07	0x2F
45] and }		0x01	0x07	0x30


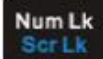





1.2.5.2 RF Keyboard key buttons and codes (conti.)

item	Function Key	Icon	Key Code under Zv Mode		
			HID Code page	HID Usage	HID Button Usage ID
46	\ and		0x01	0x07	0x31
47	; and :		0x01	0x07	0x33
48	' and "		0x01	0x07	0x34
49	` and ~		0x01	0x07	0x35
50	, and <		0x01	0x07	0x36
51	. and >		0x01	0x07	0x37
52	/ and ?		0x01	0x07	0x38
53	Caps Lock		0x01	0x07	0x39
54	F1		0x01	0x07	0x3A
55	F2		0x01	0x07	0x3B
56	F3		0x01	0x07	0x3C
57	F4		0x01	0x07	0x3D
58	F5		0x01	0x07	0x3E
59	F6		0x01	0x07	0x3F
60	F7		0x01	0x07	0x40

1.2.5.2 RF Keyboard key buttons and codes (conti.)

item	Function Key	Icon	Key Code under Zv Mode		
			HID Code page	HID Usage	HID Button Usage ID
61	F8		0x01	0x07	0x41
62	F9		0x01	0x07	0x42
63	F10		0x01	0x07	0x43
64	F11		0x01	0x07	0x44
65	F12		0x01	0x07	0x45
66	Pause Break		0x01	0x07	0x48
67	Insert		0x01	0x07	0x49
68	Home		0x01	0x07	0x4A
69	Page Up		0x01	0x07	0x4B
70	Delete		0x01	0x07	0x4C
71	End		0x01	0x07	0x4D
72	Page Down		0x01	0x07	0x4E
73	Right		0x01	0x07	0x4F
74	Left		0x01	0x07	0x50
75	Down		0x01	0x07	0x51















1.2.5.2 RF Keyboard key buttons and codes (conti.)

item	Function Key	Icon	Key Code under Zv Mode		
			HID Code page	HID Usage	HID Button Usage ID
76	Up		0x01	0x07	0x52
77	Number Lock		0x01	0x07	0x53
78	Application key		0x01	0x07	0x65
79	[Left] Ctrl		0x01	0x07	0xE0
80	[Left] Shift		0x01	0x07	0xE1
81	[Left] Alt		0x01	0x07	0xE2
82	[Left] WINDOWS logo		0x01	0x07	0xE3
83	[Right] Shift		0x01	0x07	0xE5
84	[Right] Alt		0x01	0x07	0xE6
85	Zv logo		0xFFAA	0x88	0x1
86	Home Page		0x0C	0x01	0x223
87	Full screen		0x0C	0x01	0x230
88	Function key				
89	[Multimedia] Fast Forward		0x0C	0x01	0x0B3
90	[Multimedia] Rewind		0x0C	0x01	0x0B4

1.2.5.2 RF Keyboard key buttons and codes (conti.)

item	Function Key	Icon	Key Code under Zv Mode		
			HID Code page	HID Usage	HID Button Usage ID
91	[Multimedia] Scan Next Track		0x0C	0x01	0x0B5
92	[Multimedia] Scan Previous Track		0x0C	0x01	0x0B6
93	[Multimedia] Stop		0x0C	0x01	0x0B7
94	[Multimedia] Play and Pause		0x0C	0x01	0x0CD
95	[Multimedia] Back		0x0C	0x01	0x224
96	[Multimedia] Forward		0x0C	0x01	0x225
97	[Compound] Scroll Lock		0x01	0x07	0x47
98	[Compound] Print Screen		0x01	0x07	0x46
99	[Compound] Sys Req		0x01	0x07	0x9A
100	[Compound] 7 and Home		0x01	0x07	0x5F
101	[Compound] 8 and Up		0x01	0x07	0x60
102	[Compound] 9 and Page Up		0x01	0x07	0x61
103	[Compound] *		0x01	0x07	0x55
104	[Compound] 4 and Left		0x01	0x07	0x5C
105	[Compound] 5		0x01	0x07	0x5D

1.2.5.2 RF Keyboard key buttons and codes (conti.)

item	Function Key	Icon	Key Code under Zv Mode		
			HID Code page	HID Usage	HID Button Usage ID
106	[Compound] 6 and Right		0x0C	0x01	0x0B5
107	[Compound] -		0x0C	0x01	0x0B6
108	[Compound] 1 and End		0x0C	0x01	0x0B7
109	[Compound] 2 and Down		0x0C	0x01	0x0CD
110	[Compound] 3 and Page Down		0x0C	0x01	0x224
111	[Compound] +		0x0C	0x01	0x225
112	[Compound] 0 and Insert		0x01	0x07	0x47
113	[Compound] . and Delete		0x01	0x07	0x46
114	[Compound] /		0x01	0x07	0x9A
115	[Compound] Volume up		0x01	0x07	0x5F
116	[Compound] Mute		0x01	0x07	0x60
117	[Compound] Zoom Out		0x01	0x07	0x61
118	[Compound] Volume down		0x01	0x07	0x55
119	Zoom In		0x01	0x07	0x5C

Appendix: Warning Statement

FCC Guidelines

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.

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

Declaration of Conformity for R&TTE directive 1999/5/EC

Essential requirements – Article 3

Protection requirements for health and safety – Article 3.1a

Testing for electric safety according to EN 60950-1 has been conducted. These are considered relevant and sufficient.

Protection requirements for electromagnetic compatibility – Article 3.1b

Testing for electromagnetic compatibility according to EN 301 489-1, EN 301 489-3 has been conducted. These are considered relevant and sufficient.

Effective use of the radio spectrum – Article 3.2

Testing for radio test suites according to EN 300 440-2 has been conducted. These are considered relevant and sufficient.

Hereby, [Dong Guan Jess-Link Electronics Co., Ltd.], declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

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