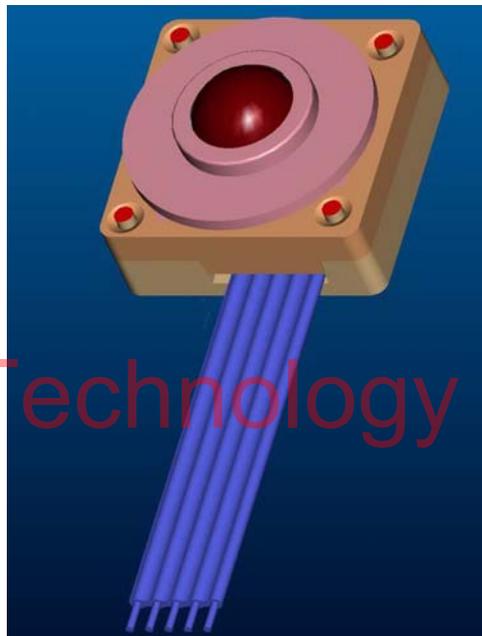




7mm Optical Trackball Set

Specification V0.5 ATB00704MCS-3204OA



Pacing Technology Co., Ltd.

Copyright © 2009 Pacing Technology CO., LTD. All rights reserved. Pacing, the Pacing logo, and other Pacing marks are owned by Pacing and may be registered. All other trademarks are the property of their respective owners.

All information contained in this document is provided strictly on a confidential basis. All or any part of the information may not be photocopied, stored in any electronic retrieval device or disclosed to any person, including disclosure under the Freedom of Information Act, without the prior written permission of Pacing Incorporated.

Revision History

Revision	Description	Originator	Status	Date
Draft	Initial	J.C.	Release	November 5, 2009

Headquarter:
Pacing Technology Co. Ltd.
4F No.76, Chou Tze St., Nei Hu Dist., Taipei, Taiwan

Tel: +886 (2) 8797-3336
Fax: +886 (2) 8797-4535

7mm Optical Trackball Set
Product Specification V0.5

Table of Contents

1	PRODUCT DESCRIPTION	3
2	PRODUCT SPECIFICATION	4
2.1	Electrical	4
2.2	Tracking	4
2.3	Physical	5
2.4	Environmental Conditions	5
3	TESTS	6
3.1	Tolerance & Reliability Tests	6
3.2	ESD Rating & Discharge Points	6
4	MECHANICAL DRAWING	7
4.1	Track Ball Module Outline	7
4.2	Dimension	8

7mm Optical Trackball Set

Product Specification V0.5

1 Product Description

The Pacing® *ATB00704MCS-3204OA* is a 7mm Optical Trackball Set with Pixart PAN3204OA optical sensor internally to the sensor interface of trackball MCU used.

Pacing optical trackball set, also called ATBS, has adopted own Patented Mirror Reflected Lens (known as MR Lens) technology and that makes it become an extraordinarily cursor control ability among current market. ATBS also has its own patent-pending dust-proof technology which can prolong the trackball life time. ATBS can work with various color of LED, such as red, IR, blue, and white. Plus, ATBS employs different material or colors of ball. With all these variety of combination choices of LED and ball which will give more room in creation for ID design.

Pacing Technology Co., Ltd.

7mm Optical Trackball Set
Product Specification V0.5

2 Product Specification

2.1 Electrical

<i>Electrical</i>	<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Test Conditions</i>	<i>Comments</i>
Power rating					
Supply voltage	1.73V	1.8V	1.87V	VDD and VDDA, Short	
	2.5V	2.7V	2.9V	VDD	
Supply current			20+/-2mA		

The following table shows the pin out of ZIF connector

<i>Pin out</i>	<i>Signal of PAN32040A</i>
1	SCLK(red color)
2	SDIO
3	MOTSWK
4	GND
5	VDD

2.2 Tracking

<i>Tracking</i>	<i>PAN32040A Sensor</i>	<i>Test Conditions</i>	<i>Comments</i>
Resolution – Optical (depend on Sensor)	400 / 500 / 600 / 800 / 1000(Default) /1200 / 1600	With SPCP868A MCU	USB interface and 100rpt

7mm Optical Trackball Set
 Product Specification V0.5

2.3 Physical

<i>Physical</i>	<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Test Conditions</i>	<i>Comments</i>
Interface protocol		USB		With SPCP868A MCU	
Ball					
Operating force	0.3N (30gf)	2.0N (204gf)	10.0N (1000gf)		
Operation Angle	-40 degrees		40 degrees		For both X and Y axis, Horizontal 0 degrees
TBM dimensions					
Height		9.90mm			
Length		17.00mm			
Width		17.00mm			
Weight (with ball)		7g			
Ball					
Weight	0.5g	1g	1.5g		
Diameter		7mm			
Color		Black			

2.4 Environmental Conditions

<i>Environment</i>	<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Test Conditions</i>	<i>Comments</i>
Operating temperature	0°C (32°F)		55°C (131°F)		
Storage temperature	-40°C (-40°F)		70°C (158°F)		
Humidity (operating & storage)	5%		95%		Non condensing

7mm Optical Trackball Set
Product Specification V0.5

3 Tests

All tests and measurements were conducted under the following conditions unless otherwise specified:

- (1) Temperature: 25°C ± 10°C (77°F ± 18°F)
- (2) Humidity: 50% ~ 60% RH
- (3) Atmospheric Pressure: 86kPa (860mBar) ~ 106kPa (1060mBar)

3.1 Tolerance & Reliability Tests

Item	Test Conditions	Specifications
Ball lifetime	(1) Operating angle 0 degrees (2) Drag force 1.0N ± 0.25N (100gf±25gf) load (3) Tracking speed 20cm/sec	Travel distance: 80km TBM tracking accuracy performance meets or exceeds the specification as described in section 2.2.
Shock tolerance	<i>Drop test conditions:</i> (1) Height: 70cm (2) Floor surface: asphalt tile over concrete or equivalent	No cracks or breakage (excl. cosmetic scratches) No functional defects for the switch actuation. TBM tracking accuracy performance meets or exceeds the specification described in section 2.2
Vibration Test		Meets IEC-68-2-36
Shock Test		Meets IEC-68-2-27
Electrical MTBF		150,000hr
Radiant intensity	60 mW/sr	No performance degradation

Pacing Technology Co., Ltd.

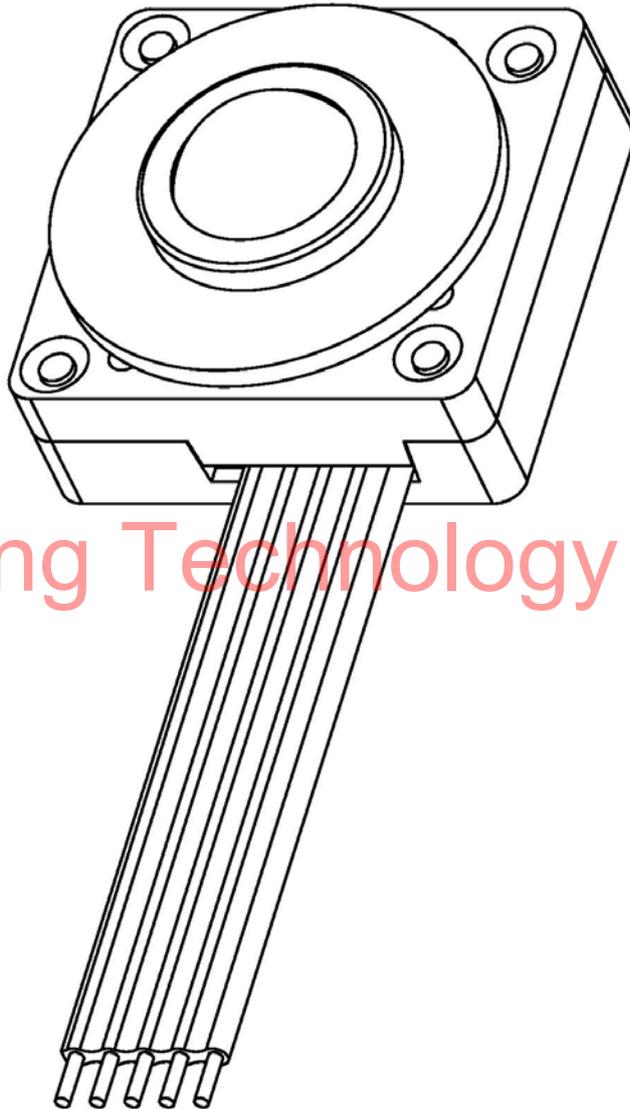
3.2 ESD Rating & Discharge Points

Item	Test Conditions	Specifications
EFT/B (Electrical Fast Transient/Burst)	Tested on IBM PC-Compatible systems	Meets IEC 801-4 level 2 1KV/5KHz
RS Performance (Radiation Susceptibility)	Tested on IBM PC-Compatible systems	Meets IEC 801-3 level 2 3V/m
ESD Rating (ElectroStatic Discharge)	Tested on IBM PC-Compatible systems	Meets IEC 801-2 level 2
	With case	No hardware errors @ 8KV No hardware damage @ 12KV
	Without case	No hardware errors @ 10KV No hardware damage @ 10KV

7mm Optical Trackball Set
Product Specification V0.5

4 Mechanical Drawing

4.1 Track Ball Module Outline

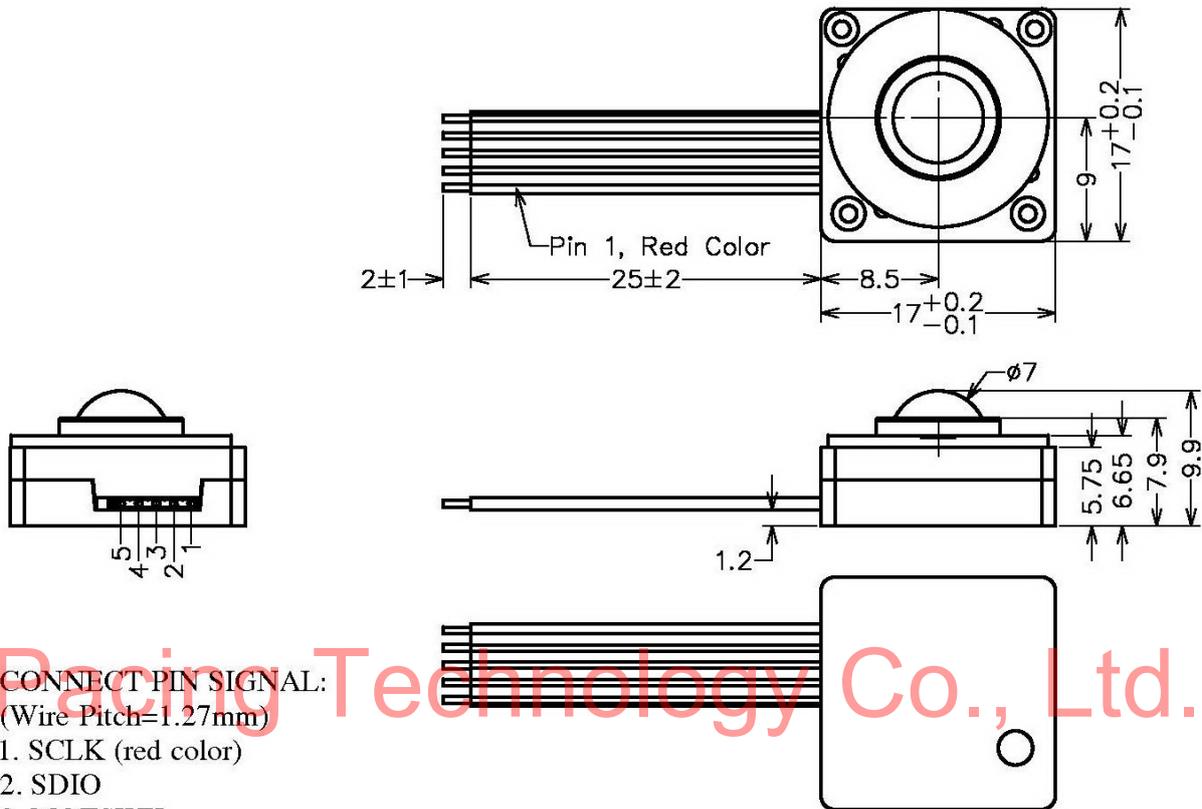


Pacing Technology Co., Ltd.

7mm Optical Trackball Set
Product Specification V0.5

4.2 Dimension

Unit = mm



CONNECT PIN SIGNAL:
(Wire Pitch=1.27mm)

1. SCLK (red color)
2. SDIO
3. MOTSWK
4. GND
5. VDD

Notes:

1. Dimensions tolerance: ± 0.1 mm