

Welcome to O-leading

O-Leading strives to be your one stop solution partner in EMS supply chain, including PCB design , PCB fabrication and PCB assembly (PCBA).We provide some of the most advanced PCB technology, including HDI PCBs,multilayer PCBs, Rigid-Flexible PCBs.We can support from quick turn prototype to medium & mass Production.

In general, our global customers are very impressed with our services:Rapid response, competitive price and quality commitment.Providing more valuable technical service and overall solution is the way O-leading forward.

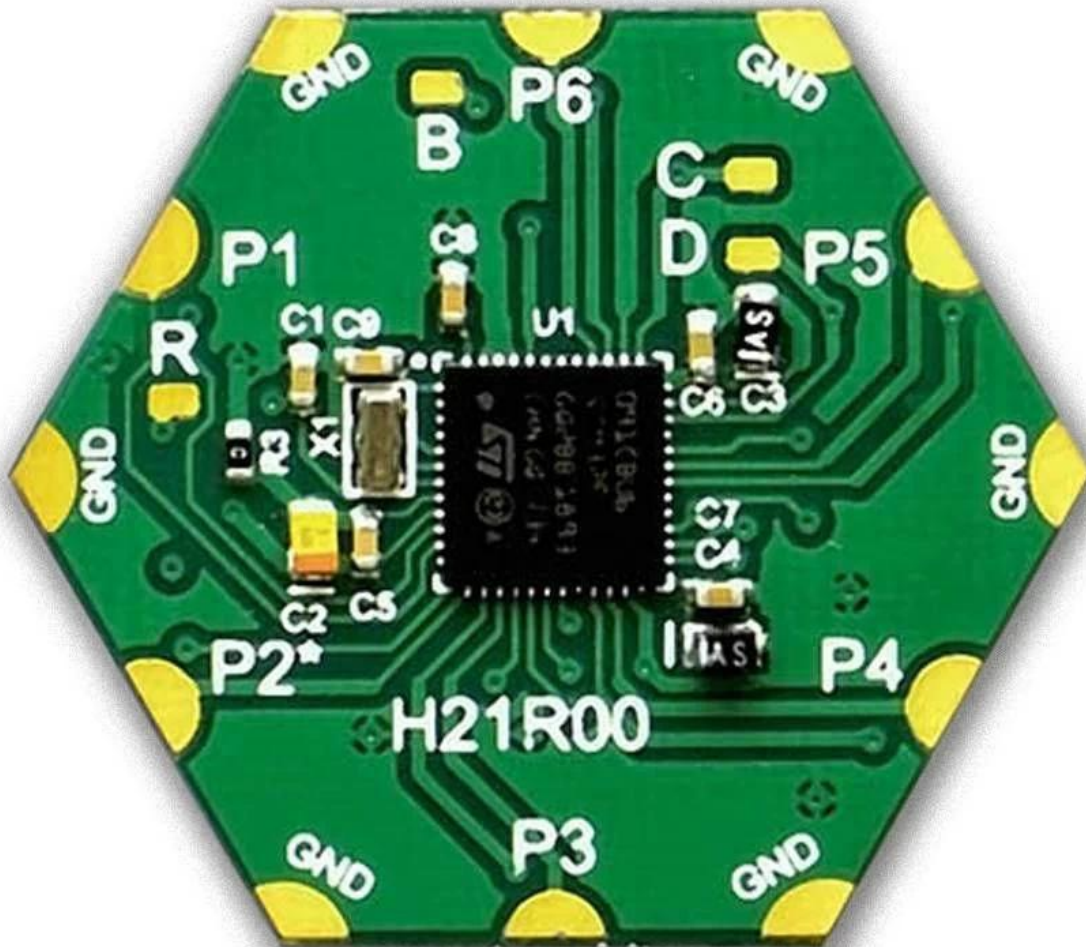
Looking to the future, O-leading will concentrate on the innovation and development of electronics manufacturing technology as always, and make persistent efforts on PCB & PCBA one-stop service to provide first-class services and create more value for our customers.

PLEASE CLICK THESE FOR MORE INFORMATION [china speaker board pcb supplier](#)

Product Description

H0BR4x is a 3-axis inertial measurement unit (IMU) combined with a 3-axis digital compass module based on STM32F0 MCU, LSM6DS3 IMU and LSM303AGR compass

- * 2 x 3-axis accelerometers for inertial force and gravity vector measurements.
- * 3-axis gyroscope for angular rate measurements.
- * 3-axis magnetometer for measuring magnetic inclination and orientation.
- * Digital temperature sensor to provide temperature measurements and calibrate gyroscope temperature drift.
- * Use H0BR4x as an integrated IMU for attitude estimation in drones and other robotic platforms.



Feature and Parameter:

- * Use as inertial-/gesture-based input device.
- * Supports sample readings of all sensors to an internal SRAM buffer, the CLI output or to a port in a remote module.
- * Supports streaming of any sensor data to an internal SRAM buffer, the CLI output or to a port in a remote module. Streaming duration and period (sampling frequency) can be adjusted.
- * Connect to external hardware or combine with other HexabitZ modules!

Technical Specifications

Front-End

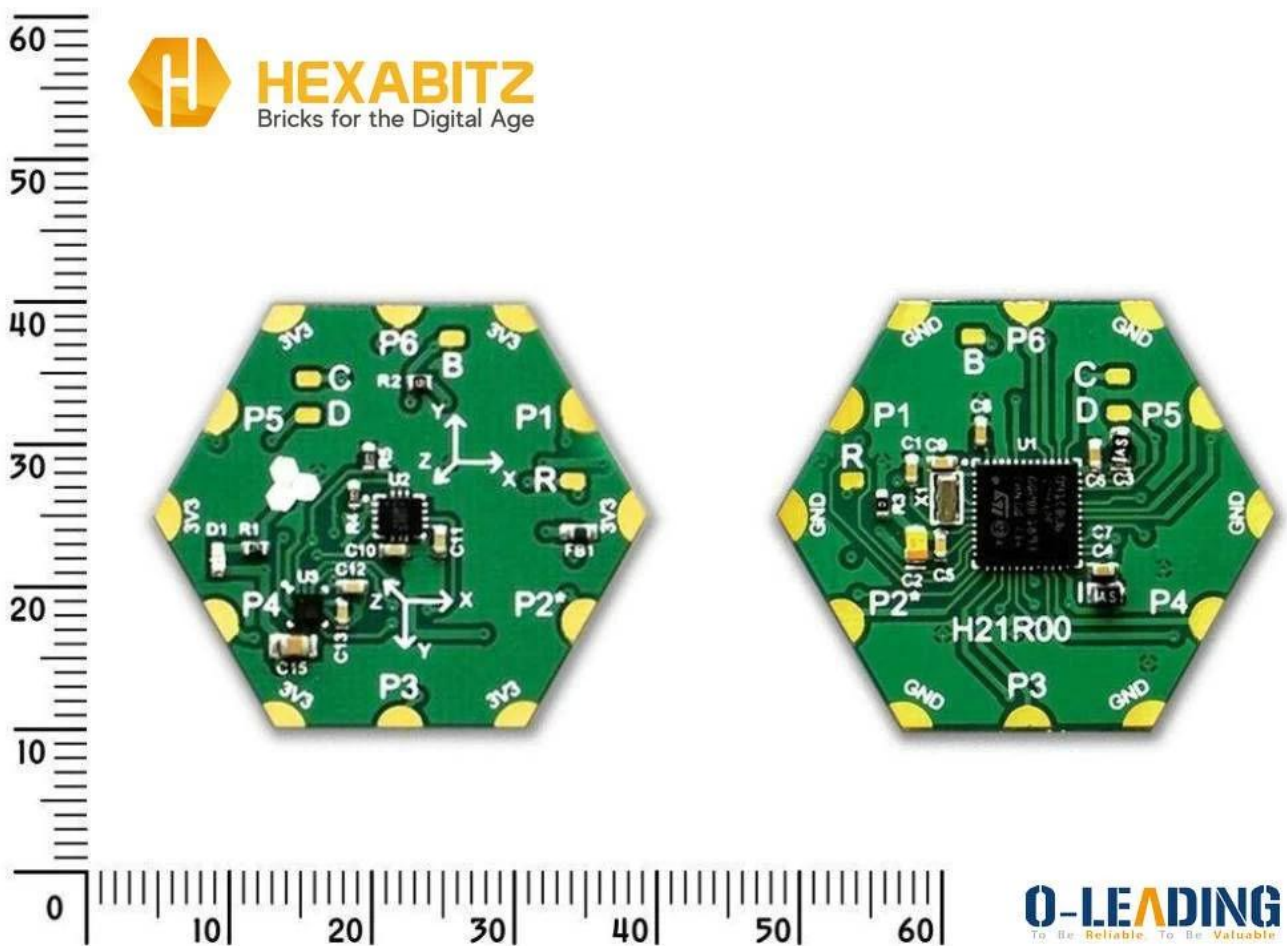
- * ST LSM6DS3 iNEMO inertial module (3D accelerometer and 3D gyroscope):
- * $\pm 2/\pm 4/\pm 8/\pm 16$ g accelerometer full scale.
- * $\pm 125/\pm 250/\pm 500/\pm 1000/\pm 2000$ dps gyroscope full scale.
- * Up to 6 kHz ODR.
- * Embedded temperature sensor.

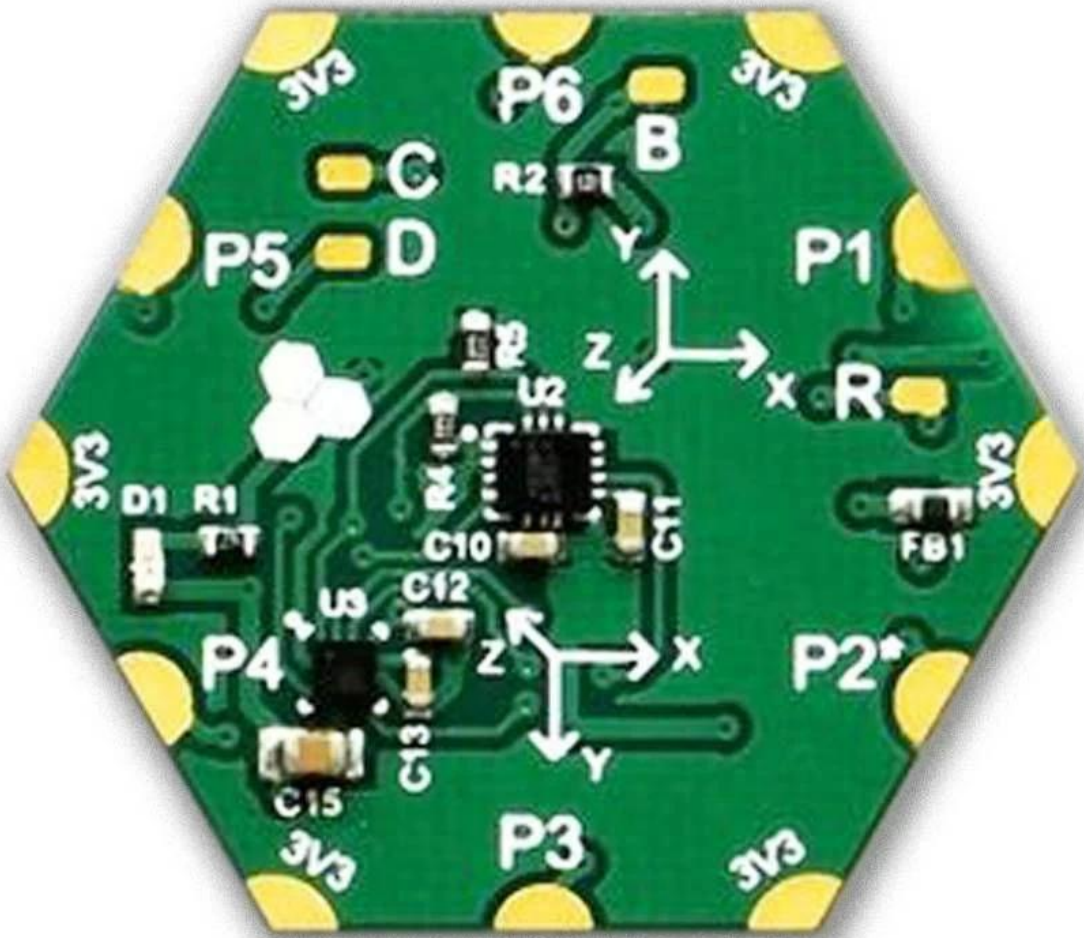
- * ST LSM303AGR eCompass module (3D accelerometer and 3D magnetometer):
- * ± 50 gauss magnetic range.
- * $\pm 2/\pm 4/\pm 8/\pm 16$ g accelerometer full scale.
- * Up to 150 Hz ODR.

Back-End

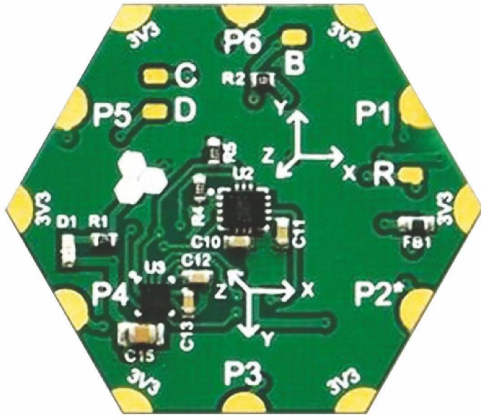
- * STM32F091CBU6 32-bit ARM Cortex-M0 MCU.
- * 8MHz external oscillator.
- * Six array ports and six power ports (+3.3V and GND).
- * Access to 6xUART, 2xI2C, SWD, BOOT0, RESET.

Physical Properties	
Shape:	Hexagon
Size:	30 mm short diagonal, 17.32 mm side
Area:	7.8 cm ²
Weight:	3 g
Soldermask Color:	Dark green
Surface Finish:	ENIG (gold) or HASL-LF (tin)





HEXABITZ QUICK START GUIDE



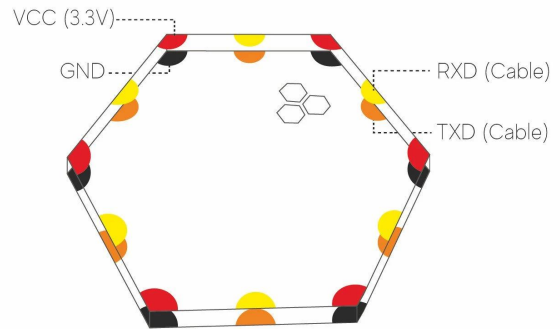
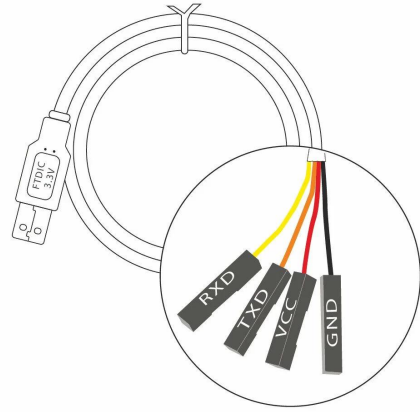
HOB4x

IMU & Digital Compass

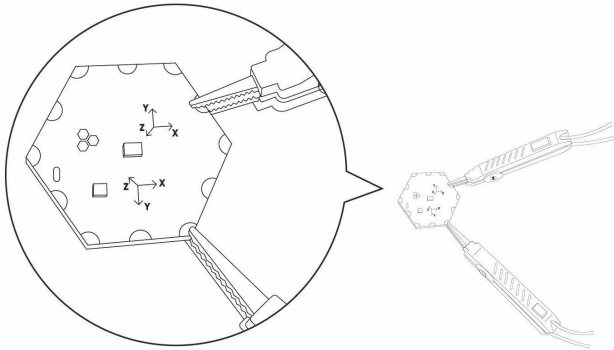
link



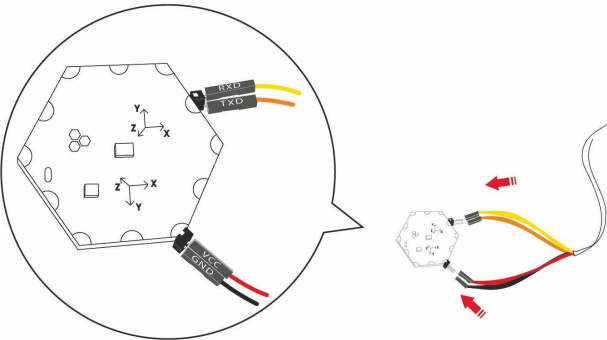
Re-48-19



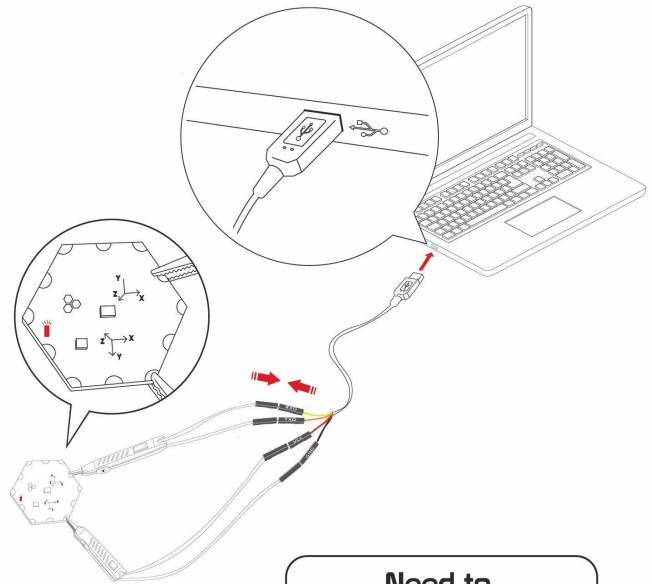
1



OR



2

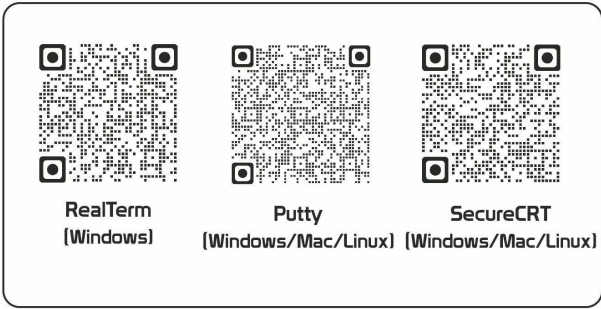


Need to
update firmware?



link

3



Use your favorite terminal software with these settings:

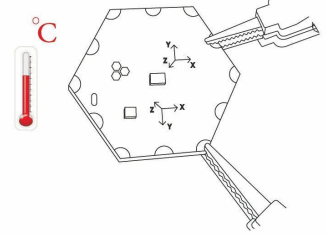
- o Baudrate: 921600
- o Display Format: Ansi
- o Parity: none
- o Data Bits: 8
- o Stop Bit: 1
- o Hardware Flow Control: none

Open the virtual COM port and hit the ENTER key. Module will respond with a welcome message.

Try some CLI commands:

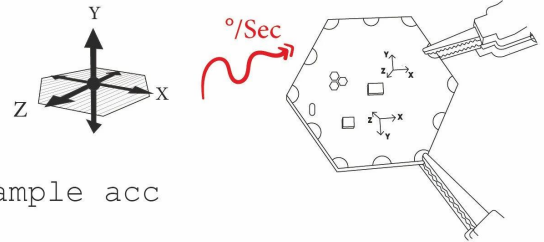
>> sample temp

Temp (Celsius) | 25.23



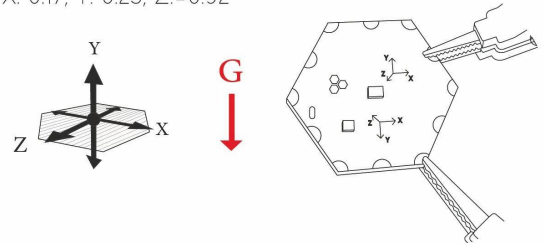
>> sample gyro

Gyro (DPS) | X: 3.27, Y: 1.12, Z: -0.71



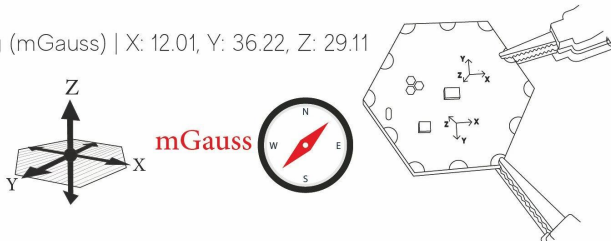
>> sample acc

Acc (G) | X: 0.17, Y: 0.23, Z: -0.92



>> sample mag

Mag (mGauss) | X: 12.01, Y: 36.22, Z: 29.11



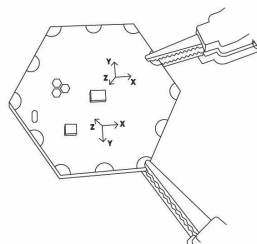
>> stream temp 500 inf

Temp (Celsius) | 25.23

Temp (Celsius) | 25.23

Temp (Celsius) | 25.23

>> stop (or ENTER key)



Type » help for more CLI commands.

Check module documentation, schematics, firmware and design files in the Resources tab.





Our Team



Factory PCB



Automatic vacuum press machine



Drilling Machine



Pattern Plating Machine



Scrubbing Machine



Developing Machine



Routing Machine



High-speed flying probe machine



E-test Machine

Factory SMT





Certifications

C I C C INSPECTION CERTIFICATION



嘉泰认证

QUALITY MANAGEMENT SYSTEM CERTIFICATE

Certificate No: 18118Q10347R05

We hereby certify that

O-LEADING SUPPLY CHAIN(HK) CO.,LIMITED

Credit No: 61691591-000-07-18-7

Registration Add: FLAT/RM 1205 12/F TAI SANG BANK BUILDING 130-132 DES VODEUS ROAD CENTRAL HK

Business Add: 1313, Floor 13, Fortune Building, Danshui Town, Huiyang District, Huizhou, Guangdong, China

Has implemented and maintains a **Quality Management System** Which fulfils the requirements of the following standards
GB/T19001-2016 idt ISO9001:2015

Scope of certification
Sales of printed circuit boards

Initial issuance period: February 27, 2018
Renewal date: April 22, 2019
This certificate is valid during: April 22, 2019 ~ February 26, 2021
This certificate is invalid without CICC qualified label in the following period


First supervision and audit	Second supervision and audit	Qualified mark
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The certification implications are under client's liability. These production services which shall be covered by the relevant effective administrative provisions and qualification provisions regulated by the state. The effectiveness of this certificate shall be notified by annual re-issuance audit of CICC. The certificate shall be valid when used together with the surveillance audit certificate. The initial issuance of this certificate can be searched at the portal of CICC: www.cicc.com.cn by the code of company: www.cicc.com.cn






C I C C INSPECTION CERTIFICATION



嘉泰认证

质量管理体系认证证书

证书号: 18118Q10347R05

兹证明

诚领供应链(香港)有限公司

统一社会信用代码: 61691591-000-07-18-7
注册地址: 香港中環德輔道中 130-132 號大生銀行大廈 1205 室
经营地址: 广东惠州惠阳淡水南亨西路财富大厦 13 楼 1313





建立的质量管理体系符合
GB/T19001-2016 idt ISO9001:2015 质量标准适用条款的要求

认证范围
印刷线路板的销售

初次发证日期: 2018年02月27日
换证日期: 2019年04月22日
证书有效期: 自2019年04月22日至2021年02月26日
在下列期限内, 未经 CICC 黏贴合格标贴, 本证书无效

第一次复审	第二次复审	贴标处
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Test Report

No. SZXEC1900530401 Date: 30 Mar 2019 Page 1 of 6

O-LEADING SUPPLY CHAIN (HK) CO., LIMITED

1313.FLOOR 13, FORTUNE BUILDING, DANSHUI TOWN, HUIYANG DISTRICT, HUIZHOU, GUANGDONG, CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : OSP

SGS Job No. : RP19-005089 - SZ
Date of Sample Received : 22 Mar 2019
Testing Period : 22 Mar 2019 - 30 Mar 2019
Test Requested : Selected test(s) as requested by client.
Test Method : Please refer to next page(s).
Test Results : Please refer to next page(s).

Conclusion : Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP), and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

Tina
Tina Fan
Approved Signatory



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Test Report

No. SZXEC1900530401 Date: 30 Mar 2019 Page 2 of 6

Test Results :

Test Part Description :

Table with 3 columns: Specimen No., SGS Sample ID, Description. Row 1: SN1, SZX19-005304.001, Green"PCB"

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
(2) MDL = Method Detection Limit
(3) ND = Not Detected (< MDL)
(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : With reference to IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015 and IEC 62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Table with 5 columns: Test Item(s), Limit, Unit, MDL, 0/1. Lists various substances like Cadmium, Lead, Mercury, Hexavalent Chromium, Sum of PBBs, etc.



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ZPMV2.E490354 - WIRING, PRINTED - COMPONENT

Wiring, Printed - Component

See General Information for Wiring, Printed - Component

O-LEADING SUPPLY CHAIN (HK) CO LTD

E490354

ROOM 1205, 12/F
TAI SANG BANK BLDG
130-132 DES VOEUS ROAD
CENTRAL, HONG KONG

Type	Cond Width		Cond Thk mic(mil)	SS/ DS/ DSO	Max	Max		Meets	C		
	Min	Edge			Area	Solder	Oper			Flame	
	mm(in)	mm(in)			Diam mm(in)	Limits C	Temp sec	Class C	UL796 DSR	I	
Multilayer (mass laminate) printed wiring boards.											
O-LEADING-401	0.1 (0.004)	0.3 (0.012)	34 (1.34)	DS	12.7 (0.5)	260	10	130	V-0	-	
O-LEADING-407	0.08 (0.003)	0.2 (0.008)	17 (0.67)	DS	9.7 (0.4)	260	10	130	V-0	All	
Multilayer printed wiring boards.											
O-LEADING-408	0.125 (0.005)	0.125 (0.005)	12 (0.47) Int:136	DS	50.8 (2.0)	280	20	130	V-0	All	*
Single layer printed wiring boards.											
O-LEADING-002	0.38 (0.015)	1.14 (0.045)	34 (1.34)	SS	19.1 (0.8)	260	10	105	V-0	All	-
O-LEADING-003	0.38 (0.015)	1.14 (0.045)	34 (1.34)	SS	19.1 (0.8)	260	10	130	V-0	▲	-
O-LEADING-033	0.15 (0.006)	0.3 (0.012)	34 (1.34)	SS	25.4 (1.0)	260	10	120	V-0	All	-
O-LEADING-205	0.1 (0.004)	0.3 (0.012)	34 (1.34)	DS	69.6 (2.7)	260	10	130	V-0	All	-
O-LEADING-206	0.15 (0.006)	0.33 (0.013)	17 (0.67)	DS	69.6 (2.7)	260	10	130	V-0	All	-
O-LEADING-D01	0.14 (0.006)	0.15 (0.006)	33 (1.30)	DS	25.4 (1.0)	260	10	130	V-0	All	*
O-LEADING-S01	0.25 (0.010)	0.25 (0.010)	17 (0.67)	SS	25.4 (1.0)	260	4	130	V-0	All	*

WIRING, PRINTED - COMPONENT | UL Product iQ

O-LEADING-S02	0.2 (0.008)	0.2 (0.008)	17 (0.67)	SS	25.4 (1.0)	260	4	130	HB	▲	*
O-LEADING-S03	0.25 (0.010)	0.25 (0.010)	34 (1.34)	SS	25.4 (1.0)	260	4	130	V-0	All	*

* - CTI marking is optional and may be marked on the printed wiring board.

Marking: Company name or file number and type designation. May be followed by a suffix to denote factory identification or burning test classification.

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Process Capability

PCB Production Capabilities

Layer Count	1Layer-32Layer
Finished copper thickness	1/3oz-12oz
Min Line width/spacing internal	3.0mil/3.0mil
Min Line width/spacing external	4.0mil/4.0mil
Max Aspect Ratio	10:1
Board thickness	0.2mm-5.0mm
Max Panel size(inches)	635*1500mm
Minimum Drilled Hole Size	4mil
Plated Hole Tolerance	+/-3mil
Blind/Buried Vias (All Types)	YES
Via Fill(Conductive,Non-Conductive)	YES
Base Material	FR-4,FR-4high Tg,Halogen free material,Rogers,Aluminium base,Polyimide,Heavy Copper
Surface finishes	HASL,OSP,ENIG,HAL-LF,Immersion silver,Immersion Tin,Gold fingers,Carbon ink

SMT Production Capabilities

PCB Material	FR-4,CEM-1,CEM-3,Aluminum-based board
Max PCB size	510x460mm
Min PCB size	50x50mm
PCB Thickness	0.5mm-4.5mm
Board thickness	0.5-4mm
Min Components size	0201
Standard chip size component	0603 and larger
Component max height	15mm
Min lead pitch	0.3mm
Min BGA ball pitch	0.4mm
Placement precision	+/-0.03mm

Packaging & Delivery

Shipping service



Quick Turn Lead Time		
Layer Count:	Lead Tim	Special Requirement
1L/2L	2-3days	24 Hours,48 Hours
4L	3-4days	48 Hours
6L	4-5days	72 Hours
8L	5-6days	NA
10L	6-7days	NA
12L	7-8days	NA
14L	8-9days	NA

Standard Lead Time		
Layer Count:	Sample Lead Time	Volume order lead time
2L	4 days	10 days
4L	5 days	11 days
6L	6 days	12 days
8L	8 days	14 days
10L	10 days	16 days
12L	12 days	18 days
14L	14 days	20 days
16-32L	18 days	24 days

FAQ

1. How do O-Leading ensure quality?

Our high quality standard is achieved with the following.

1.1 The process is strictly controlled under ISO 9001:2008 standards.

1.2 Extensive use of software in managing the production process

1.3 State-of-art testing equipments and tools. E.g. Flying Probe, X-ray Inspection, AOI (Automated Optical Inspector) and ICT (in-circuit testing).

1.4.Dedicated quality assurance team with failure case analysis process

1.5.Continuous staff training and education

2. How do O-Leading keep your price competitive?

Over the last decade, prices of many raw materials (e.g. copper, chemicals) had doubled, tripled or quadrupled; Chinese currency RMB had appreciated 31% over US dollar; And our labor cost also increased significantly.

However, O-Leading have kept our pricing steady. This owns entirely to our innovations in reducing cost, avoiding wastes and improving efficiency. Our prices are very competitive in the industry at the same quality level.

We believe in a win-win partnership with our customers. Our partnership will be mutually beneficial if we can provide you an edgeon cost and quality.

3. What kinds of boards can O-Leading process?

Common FR4, high-TG and halogen-free boards, Rogers, Arlon, Telfon, aluminum/copper-based boards, PI, etc.

4. What data are needed for PCB & PCBA production?

4.1 BOM (Bill of Materials) with reference designators: component description, manufacturer's name and part number.

4.2 PCB Gerber files.

4.3 PCB fabrication drawing and PCBA assembly drawing.

4.4 Test procedures.

4.5 Any mechanical restrictions such as assembly height requirements.

5. What's the typical process flow for multi-layer PCB?

Material cutting → Inner dry film → inner etching → Inner AOI → Multi-bond → Layer stack up Pressing → Drilling → PTH → Panel Plating → Outer Dry Film → Pattern Plating → Outer etching → Outer AOI → Solder Mask → Component Mark → Surface finish → Routing → E/T → Visual Inspection.

6. What's the key equipments for HDI manufacturing?

Key equipment list is as following: Laser drilling machine, Pressing machine, VCP line, Automatic Exposing machine, LDI and etc.

The equipments we have are the best in the industry, laser drilling machines are from Mitsubishi and Hitachi, LDI machines are from Screen(Japan), Automatic Exposing machines are also from Hitachi, all of them make we can meet customer's technical requirements.

7. How many types of surface finish O-lead can do?

O-the leader has the full series of surface finish, such as: ENIG, OSP, LF-HASL, gold plating (soft/hard), immersion silver, Tin, silver plating, immersion tin plating, carbon ink and etc. .. OSP, ENIG, OSP + ENIG commonly used on the HDI, we usually recommend that you use a client or OSP OSP + ENIG if BGA PAD size less than 0.3 mm.

8. What's your capability for FPC? Can O-Leading provide SMT service also?

O-Leading can fabricate FPC from single layer to 8layer, the working panel size can be as large as 2000mm*240mm, please find the details in the page "Flex Capability"

We also provide SMT one stop service to customer.

9. What are the main factors which will affect the price of PCB?

Material;

Surface finish;

Technology difficulty;

Different quality criteria;

PCB characteristics;

Payment terms;

Different manufacturing countries.

10. What's the definition of PCB, PWB and FPC and what's the difference?

PCB is short for Printed Circuit Board;

PWB is short for Printed Wire Board, same meaning as Printed Circuit Board;

FPC is short for Flexible Printed Board.

11. What factors should be considered when choosing the material for a PCB board?

Below factors should be considered when we choose the material for PCB:

The material's Tg value should be greater than the operation temperature;

Low CTE material has good performance of thermal stability;

Good thermal resistance performance: Normally PCBs are required to resist 250°C for at least 50s.
Good flatness; In consideration of the electrical properties, low loss/high permittivity material is used on high frequency PCB; Polyimide glass fiber substrate used for flexible PCB; Metal core is used when the product has strict requirement of heat dissipation.

12. What's the merits of O-leading's rigid-flex PCB?

O-leading's rigid-flex PCB has the characters of both FPC and PCB, so it can be used in some special products. Some part is flexible while the other part rigid, it can help save product's interior space, reduce product volume and improve performance.

13. How to you make the impedance calculation?

The impedance control system is done using some test coupons, the SI6000 soft and the CITS 500s equipment from POLAR INSTRUMENTS.

The equipment measures the impedance on a representative track configuration coupon of which the client has given us a determinate value and tolerance.