

Guangdong Xiangweida Technology Co., Ltd.

Company Profile — Hardware Division

- Deeply Rooted in Precision Manufacturing
- Driven by Technological Innovation
- Creating Core Value for Customers

Company Profile — Hardware Division

Guangdong Xiangweida Technology Co., Ltd. has been deeply engaged in new aluminum alloy materials and precision hardware die casting for more than a decade. We are one of the few smart manufacturing companies in the industry with dual core capabilities in proprietary specialty aluminum alloy development and end-to-end precision die-casting manufacturing.

On the R&D side, we operate a dedicated materials laboratory and have independently developed three specialty aluminum alloys:

X25 — High-Thermal-Conductivity Aluminum Alloy

X26 — High-Strength, High-Toughness Aluminum Alloy

X11 — Die-Castable Aluminum Alloy for Colored Anodizing

All formulations are proprietary and fully controlled in-house. Material properties have been verified by testing institutions in China and overseas. These alloys are specifically designed to address key challenges in high-end equipment thermal management, structural strength, and surface aesthetics.

On the manufacturing side, we are equipped with large high-pressure die-casting machines, CNC machining centers, and surface treatment lines. By leveraging the characteristics of our proprietary alloys, we continuously optimize die-casting and machining processes to support the mass production of complex, thin-walled structural components.

We provide one-stop finished-product delivery, covering alloy melting, die casting, precision machining, and surface treatment. Our machining accuracy and production yield are among the industry's leading levels.

Our products are widely used in semiconductor thermal modules, new energy vehicles, robotics components, and other advanced applications. We have established long-term partnerships with global industry leaders including Intel, TSMC, and Siemens. Xun Kai International, a Taiwan-based supplier to NVIDIA, has also completed material validation for our alloy solutions.

Looking ahead, we will continue to develop and optimize advanced aluminum alloy materials and upgrade our intelligent die-casting production lines. Leveraging our dual strengths in material innovation and precision manufacturing, we aim to accelerate the localization of lightweight solutions for high-end manufacturing.

I. New Material R&D

Three Specialty Aluminum Alloys

X25 High-Thermal-Conductivity Aluminum Alloy — Engineered for Ultimate Thermal Performance

Ultra-High Thermal Conductivity

Thermal conductivity reaches 232 W/(m · K), approaching that of pure copper, while its density is only one-third that of copper, perfectly balancing thermal performance and lightweight design.

Excellent Electrical Conductivity

Electrical conductivity reaches 32.3 MS/m, bringing aluminum closer to copper in both thermal and electrical performance and supporting the broader transition toward replacing copper with aluminum.

Outstanding Cost Efficiency

X25 can be precision die cast into complex heat-dissipation cavities to meet the diverse structural requirements of high-end equipment. Compared with pure copper thermal solutions, it significantly reduces costs and enhances the market competitiveness of end products.

Benchmark Case: Intel & TSMC Fanless Industrial Computers

Designed for fully enclosed, fanless, and demanding operating environments, X25 aluminum alloy has delivered excellent thermal performance and supported the stable long-term operation of equipment under high-temperature conditions since entering mass production applications in 2021. Intel noted in its evaluation: “Temperature control is excellent, with sufficient thermal capacity to support even higher-power chips.”



X25 Test Reports

CTI 华测检测

检测报告

报告编号 A2250579581101C

第 3 页 共 4 页

测试项目：导热系数

1. 测试设备

设备名称	型 号
导热系数仪	LFA467
差示扫描热量计	DSC 25
分析天平	PX224ZH

2. 环境条件

温度：23±2℃；湿度：50±5%RH

3. 测试标准：ASTM E1461-13 (2022)，ASTM E1269-24，GB/T 1423-1996

4. 测试条件

测试模型：Cowan 模型+脉冲修正

5. 测试结果

测试样品	测试结果
A2250579581101001	
测试方向	纵向
试验温度 °C	25
厚度 mm	2.956
密度 g/cm ³	2.729
比热容 J/(g*°C)	0.896
热扩散系数 mm ² /s	0.115
导热系数 W/(m*K)	227.683

Domestic Testing Report

測試報告

號碼: ETS25500017

日期: 12-Jun-2025

頁數: 2 of 7

訊凱國際股份有限公司
台北市內湖區新湖一路398號6樓

測試部位敘述

No.1 : 銀色金屬

結果總結：

序號	測試項目	測試方法	單位/符號
1	導熱係數	ASTM E1461-13(2022)	W/(m·K)
2	比熱容(Cp)	客戶提供	J·g ⁻¹ ·K ⁻¹
3	密度	客戶提供	g/cm ³

1. 測試項目：導熱係數

樣品描述：金屬樣塊

測試方法：ASTM E1461-13(2022)

測試條件：

測試溫度：25℃

測試結果：

測試溫度	導熱係數 (λ) W/(m·K)	熱擴散係數 α mm ² /s	比熱容 Cp J·g ⁻¹ ·K ⁻¹	樣品密度 (ρ) g/cm ³	比熱容 (Cp) J·g ⁻¹ ·K ⁻¹
25 °C	232	0.115	0.896	2.702	0.912

備註：

- 樣品溫度由實驗
- 樣品尺寸由實驗
- 比熱容由實驗
- 依據 ASTM E1461-13 (2022) 公式 (λ) 由公式 $\lambda = \alpha \cdot \rho \cdot C_p$ 得來。

DRAFT

Troy Chang / Department Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

小红书号: 49271466

Taiwan Testing Report

X26 High-Strength, High-Toughness Aluminum Alloy — Comparable to Aviation-Grade Quality



Superior Mechanical Properties

At room temperature, tensile strength is ≥ 409 MPa and yield strength is ≥ 327 MPa, with performance levels comparable to those of automotive body-frame structures.



Excellent Weather Resistance

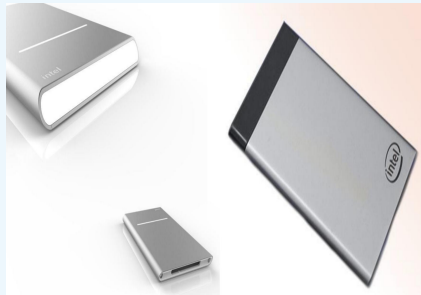
X26 is particularly well suited for enclosure applications. Following passivation and other treatments, it provides excellent fatigue and corrosion resistance, maintaining structural stability under long-term and demanding operating conditions and ensuring safety and reliability throughout the product lifecycle.



Exceptional Lightweighting

At equivalent strength, X26 can achieve more than 50% weight reduction compared with conventional steel, significantly reducing energy consumption while improving the portability and operational efficiency of end products.

Benchmark Application: Intel® s Choice



Snap-Fit PC Enclosure

It combines an ultra-thin design with robust protection. While enabling an ultra-slim profile, it provides aviation-grade structural strength and effectively protects the device against everyday bumps and impacts.



New Energy Vehicle Battery Aluminum Housing

As a key protective layer for battery systems, it offers excellent thermal conductivity while effectively absorbing impact energy. It helps protect battery cells in collisions and other extreme scenarios, enhancing overall system stability and safety.

X26 Test Reports



分析测试报告

编号: 201811L208

样品名称 铝基合金
委托单位 深圳市祥炜达精密五金有限公司
检验类别 委托检验

国家有色金属及电子材料分析测试中心
National Center of Analysis and Testing for
Non-ferrous Metals & Electronic Materials



SEM/ATC CS 001-2003 (No.2 Xinjiekouwai Street, Beijing,100088 China) 第 2 页 共 2 页
国家有色金属及电子材料分析测试中心

分析测试报告

编号: 201811L208

委托单位	深圳市祥炜达精密五金有限公司		
联系电话	15814139913	样品名称	铝基合金
样品数量	3	送样日期	2018.11.14
牌号状态	SYK-A1、短条状	报告日期	2018.11.28
测试项目	R_m , $R_{p0.2}$, A		
样品编号	分析测试结果		
	抗拉强度 R_m / MPa	规定塑性 延伸强度 $R_{p0.2}$ / MPa	断后伸长率 A / %
A1	404	329	2.5
A2	416	321	2.5
A3	406	332	2.0
以下空白			
分析测试依据	GB/T 228-2010		
备 注			



批准人: 王福生 审核人: 张永峰 报告编制人: 李琪

X26 Test Reports

No.2 Xijiekouwai Street, Beijing,100088 China) 共 2 页 第 1 页

国家有色金属及电子材料分析测试中心

分析测试报告

编号: 201811L208

委托单位	深圳市祥炜达精密五金有限公司		
联系电话	15814139913	样品名称	铝基金
样品数量	3	送样日期	2018.11.14
牌号状态	SYK-A1, 短条状	报告日期	2018.11.28
测试项目	维氏硬度		
样品编号	分析测试结果		
	维氏硬度		
	HV0.2		
C1	171	179	172
C2	178	172	179
C3	172	179	180
以下空白			
分析测试依据	GB/T 228-2010		
备 注			

批准人: 王福生 审核人: 张永明 报告编制人: 李璞

NFM/ATC CS 001-2007 (No.2 Xijiekouwai Street, Beijing,100088 China) 共 3 页 第 1 页

国家有色金属及电子材料分析测试中心

分析测试报告

编号: 201811L210

委托单位	深圳市祥炜达精密五金有限公司		
联系电话	15814139913	样品名称	铝基金
样品数量	1	送样日期	2018.11.14
牌号状态	SYK-A1, 短条状	报告日期	2018.12.10
测试项目	弹性模量		
样品编号	分析测试结果		
	弹性模量		
	E_t / GPa		
D	74.0		
以下空白			
分析测试依据	GB/T 22315-08		
备 注			

批准人: 王福生 审核人: 张永明 报告编制人: 李璞

X26 Test Reports

分析测试报告

编号: 201811L210

委托单位	深圳市祥伟达精密五金有限公司		
联系电话	15814139913	样品名称	铝基合金
样品数量	5	送样日期	2018.11.14
牌号状态	SYX-A1、短条状	报告日期	2018.12.10
测试项目	冲击吸收能量, 密度, 电导率		
样品编号	分析测试结果		
	冲击吸收能量 KU_2/J	密度 g/cm^3	电导率 MS/m
	N1 1.076	3.18	11.5
	N2 1.094		
	N3 1.056		
以下空白			
分析测试依据	GB/T 229-2007 GB/T 1943-2007 GB/T 1423-1996 GB/T 12966-2008 GB/T 351-1995		
备 注			

批准人: 王福生 审核人: 张永峰 报告编制人: 李琛

分析测试报告

编号: 201811L210

委托单位	深圳市祥伟达精密五金有限公司		
联系电话	15814139913	样品名称	铝基合金
样品数量	1	送样日期	2018.11.14
牌号状态	SYX-A1、短条状	报告日期	2018.12.10
测试项目	热导率		
样品编号	分析测试结果		
	温度 / ℃	热导率 /(W/(m·K))	
N1	25	209.6	
	100	207.3	
	200	201.0	
	300	192.6	
以下空白			
分析测试依据	GB/T 22588-2008 ASTM D5470-12		
备 注			

批准人: 王福生 审核人: 张永峰 报告编制人: 李琛

X11 Die-Castable Aluminum Alloy for Colored Anodizing — Redefining Surface Aesthetics

普通压铸件 VS X11自研铝合金



普通压铸件难上色:

- 1、硅/锌含量高
- 2、多气孔
- 3、仅能上黑色



X11自研铝合金:

新配方, 均匀上色
阳极氧化, 多彩美观



Superior Anodizing Performance

Through precise compositional control, X11 overcomes the challenges of coloring die-cast aluminum, enabling uniform, fine, and vibrant colored anodizing with rich and consistent colors.



Excellent Cost Efficiency

X11 retains the high efficiency and precision of die casting while significantly reducing manufacturing costs, delivering a premium CNC-like look and feel at a more competitive cost.



Functionality Meets Aesthetics

The anodized layer not only enhances appearance but also provides excellent wear resistance, corrosion resistance, and electrical insulation, combining aesthetics with durability.

Breaking a Century-Old Technical Barrier: Traditional die-cast aluminum alloys, due to high silicon content, high zinc content, and porosity defects, have historically faced significant challenges in achieving uniform and attractive anodized finishes, leaving them largely excluded from the high-end cosmetic parts market. Through innovative compositional design, X11 addresses this fundamental challenge at its source, providing consumer electronics, smart home products, automotive interiors, and other applications with a new material solution that combines cost efficiency with a premium appearance and finish.

II. Hardware Die-Casting Manufacturing

One-Stop Finished-Product Delivery: Alloy Melting → Die Casting → Precision Machining → Surface Treatment

Die-Casting Equipment

Zinc Alloy Die-Casting Machines

5 units | Clamping force: 200–800 T

Aluminum Alloy Die-Casting Machines

25 units | Clamping force: 38–200 T

Magnesium Alloy Die-Casting Machines

5 units | Clamping force: 180–1,000 T

High-Speed Precision Servo Multi-Axis Die-Casting Machines

20 units



CNC Equipment





Mold-Making Equipment

10EDM machines

9milling machines

10grinding machines^c

10wire-cut EDM machines

5CNC machines

2SODICK CNC wire-cut EDM machines

1SODICK machining center

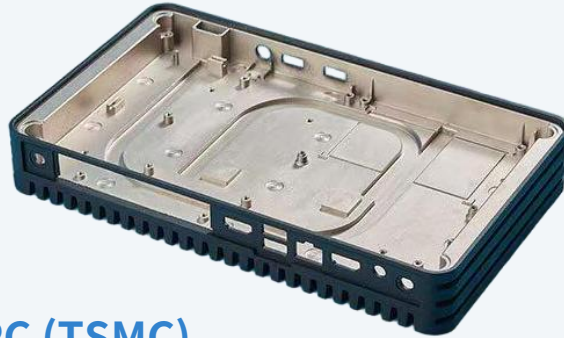
4SODICK CNC EDM machines

Product Applications

Semiconductor & AI Liquid Cooling



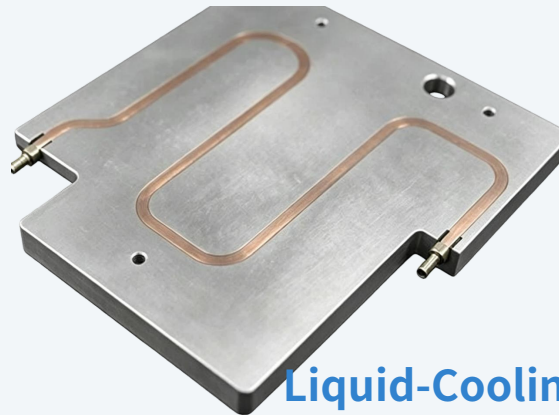
Industrial PC (TSMC)



Fanless Industrial-Grade Computer (Intel)



Server Rack Liquid



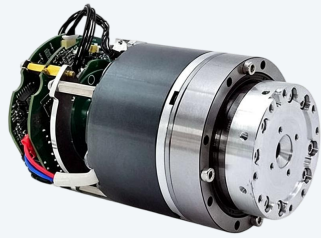
Liquid-Cooling Plates



Cooling Connectors

Product Applications

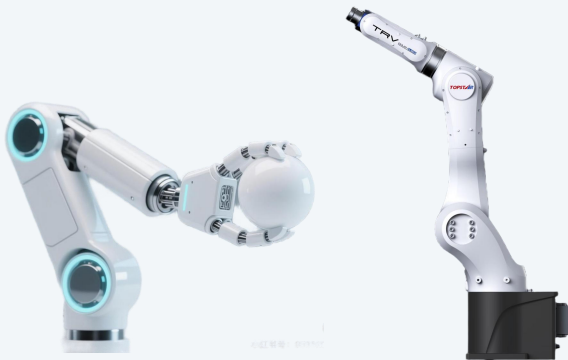
Robotics Components & Embodied AI Data Collection



Robot Joints



VR Headsets & Head-Mounted Data Collection Devices



Robotics Components



Wrist-Worn Data Collection Devices

Product Applications

New Energy & Energy Storage



Aluminum EV Battery Housings



EV Charging Connectors



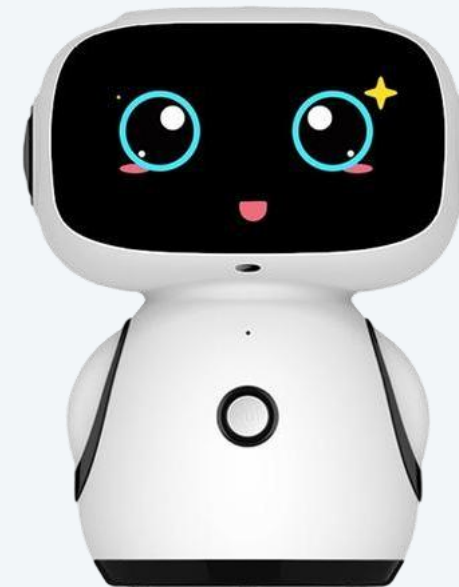
Energy Storage Cabinets

Product Applications

AI Hardware



AI Voice Recorders



AI Desktop Educational Robots

Product Applications

3C Electronics



Laptops



Home Beauty Devices



Bluetooth Earbuds

Product Applications

Smart Home



Die-Cast Colored-Anodized
Door Handles



Smart Door Locks



Robotic Vacuum Cleaners



Bluetooth Speakers

Customer Cases

Core Strategic Clients



SONY

SIEMENS



茅台集团



JMGO
坚果投影



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Thanks for watching



Xiangweida Technology looks forward to partnering with you to create a brighter future together!