MACLOUD 云聚

Shenzhen Macloud Intelligent Technology Co.,Ltd.

➢ Provide AI server related products+Service

➢ Providing ODM/JDM/OEM one-stop service

  （R&D+Supply Chain+Manufacture&Test）

Q4/2024

MACLOUD 云聚

CATALOG 目 录

INTRODUCTION

A
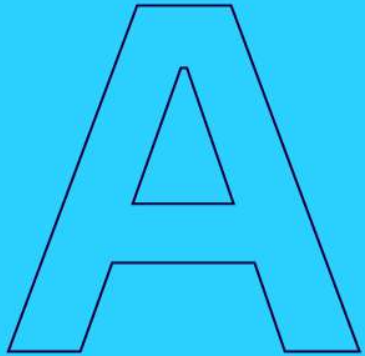
Macloud in short

- Manufacturing base in Shenzhen
- R&D team base in Shanghai & Hangzhou(45 people)
- Full service ODM OEM&EMS supplier
- All customers in multiple industries(Server/Industrial/Telecom etc.)
- Customer Focus team
- From prototype and NPI to after sales service
- Support through product life cycle
- LEAN based operation principles
- High Quality focus
- High technological competence Leading technology

Design › Sourcing › Manufacturing › Delivering › After Sales

A 公司简介
INTRODUCTION

MACLOUD 云聚

Shenzhen Macloud Intelligent Technology Co.,Ltd.

Locations:

2 building, Jiuzhou Industrial Park,

Guangming District Shenzhen

◆ Dust-Free workshop for PCBA

◆ Assembly test workshop for Computing power

◆ Assembly test workshop for Robot

Company Orientation

Macloud is centered around computing power, committed to becoming the industry's leading intelligent solution and from design to manufacturing one-stop service provider. The company focuses on server, industrial control, intelligent terminal, medical, automotive fields, providing product design and precision manufacturing service. Realize the enterprise mission of "Focusing On Customer Competitiveness"!

Core Service

Design and manufacturing for server related products;
Design and manufacturing for Universal intelligence class products

PCBA & EMS business;
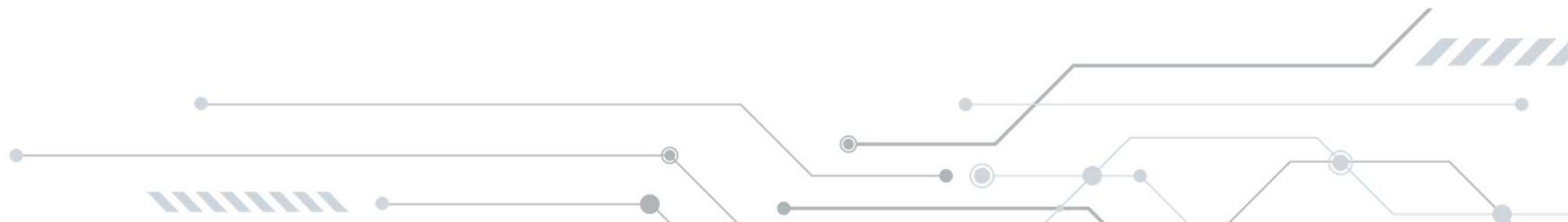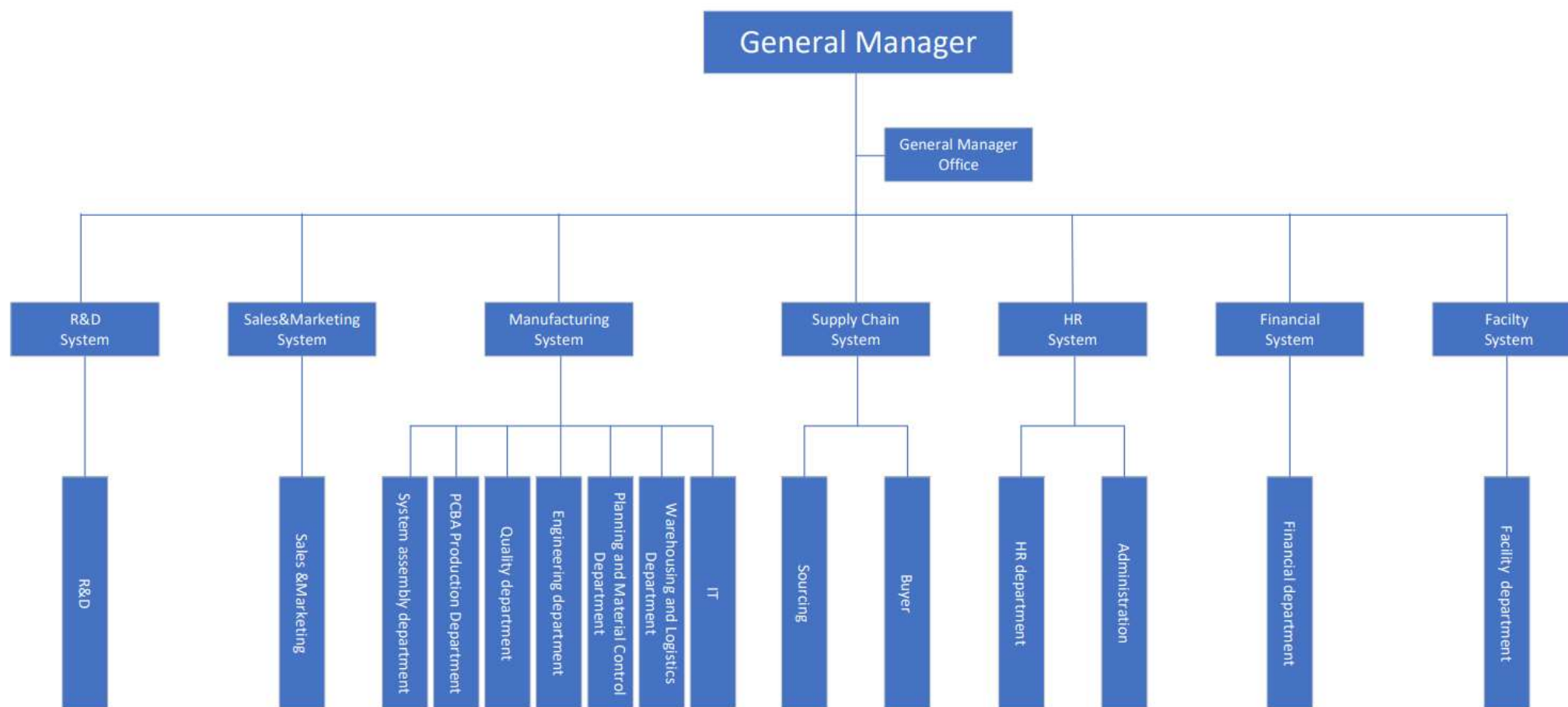Modular product Design & Complete assembly

O-Chart

General Manager

General Manager Office

R&D System

Sales&Marketing System

Manufacturing System

Supply Chain System

HR System

Financial System

Facilty System

R&D

Sales &Marketing

System assembly department

PCBA Production Department

Quality department

Engineering department

Planning and Material Control Department

Warehousing and Logistics Department

IT

Sourcing

Buyer

HR department

Administration

Financial department

Facility department
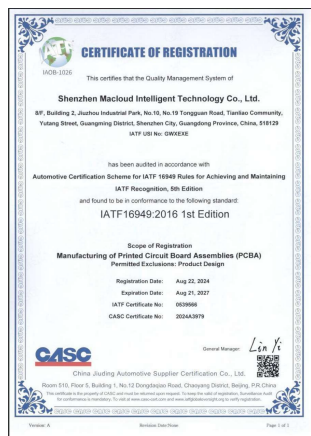
IATF16949:2016

ISO45001:2018

ISO14001:2015

ISO13485:2016

ISO9001:2015

PRODUCT

B

Computer products

01 | PCBA
(Server, Industrial,Robot,Automotive,Medical etc.)

02 | ODM& Box Building
**(GPU Server, Intelligent electronic products)**

PCBA (Server)

PCBA(Industrial,Medical)

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Dual-channel general purpose high-end computing server

Product feature

✓ CPU：The latest generation Intel EGS CPU is used, with a single CPU UP to 350W

✓ Storage：Support up to 45*2.5 (first 25, middle 10, rear 10)

✓ PCIe：Supports up to 16*8PCIe (1 in the middle, 13 in the rear, OCP2)

✓ GPU：GPU Supports a maximum of eight single-width Gpus and four dual-width Gpus.

✓ Thermal：The system reserves water cooling design interfaces

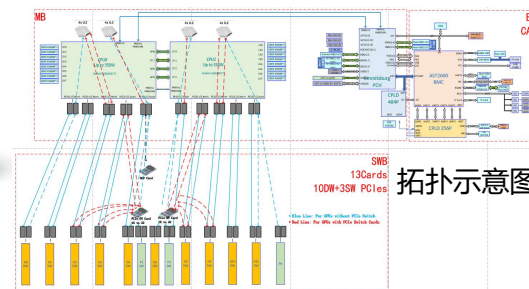✓ OCP：The OCP network card is hot swappable

✓ Management：ASP2600&Open BMC
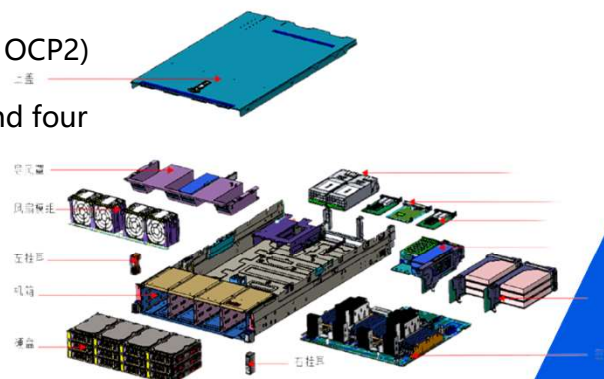
Application fields

Data centers, smart scenarios, etc.

● It can realize nearly 100 flexible configurations to meet different customer needs and improve the cost performance of customers

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4U AI Server

拓扑示意图

product feature

- ✓ CPU：Intel EGS CPU，SPR/EMR*2，UP to 350W
- ✓ GPU: Supports up to 10 DW Gpus, compatible with mainstream GPU cards such as NV, Center, and Kunlun
- ✓ Storage: Support 12*3.5 or 25*2.5 Sas/Sata/NVMe
- ✓ PSU: Support 2+2 redundancy
- ✓ PCIe：Support 8*16+5*8/10*16+1*8PCIe card
- ✓ Expansibility：Add the PCIe Switch card flexibly based on customer requirements

- ● Performance benchmarking industry mainstream card GPU server

application fields

AI experimental lightweight customers, AI inference users, HPC class users

AI BOX

Product feature

✓ CPU：16GB NVIDIA Arm Cortex A78AE

✓ GPU：1024-core NVIDIA Arm Ampre GPU with 32 Tensor cores

✓ Storage：M.2 & SD Card

✓ Memory：16GB LPDDR5

✓ Environment：-10~60C

✓ Power：9~36Vdc

● NV CPU+GPU solution, stable performance, suitable for a wide range of scenarios
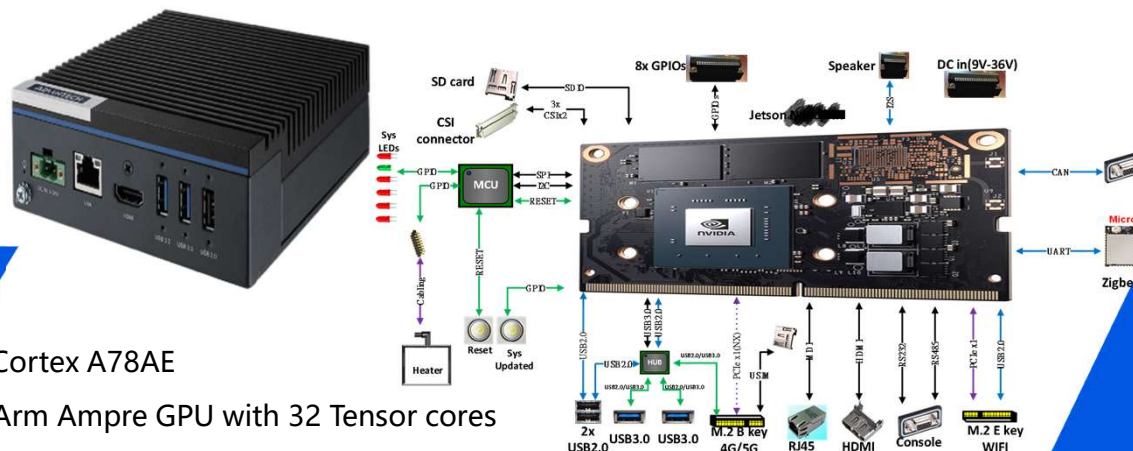
Application fields

Intelligent driving, hydrological monitoring, face recognition, etc

C

- Macloud R & D team currently has 45 people, committed to X86, Xinchuang and other technology platform product development management, product design, development and implementation, system testing, engineering transformation and product maintenance, difficult problem handling ;
- With a complete R & D end-to-end development verification system, 6 departments, 25 positions covering all aspects of product development ;

- Familiar with BMC software, in addition to the development of BMC chip platform of ASPEED company, we can use domestic ARM processor to complete all software development work from the bottom UBOOT to the upper layer Open BMC ;
- Be familiar with domestic GPU and NPU platforms, communicate closely with domestic AI manufacturers, and have the ability of AI platform based middleware software and AI algorithm ;

Macloud R&D

Project Dpt.	PM	SE				
HW Dpt.	EE	DC	SI/PI	Layout	SIV/PIV	EMC
FW Dpt.	BIOS	BMC	Diag			
ME Dpt.	ME	Thermal	Package	ID		
Validation Dpt.	BIOS Validation	BMC Validation	SIT Validation	PA Validation		
Engineering Dpt.	NPI	BOM	Document	Certification	CE	EC

Complex boards design ability

1 2U2Ways Product

- ✓ Whitley/Eaglestream/BHS Platform
- ✓ 350 kinds of parts
- ✓ 7000+ components

2 2U4Ways AI Product

- ✓ Whitley/Eaglestream/BHS Platform
- ✓ 400 kinds of parts
- ✓ 10000+ components

3 2U high-density

Part density is 30% higher than conventional motherboard

2Ways MB

4ways MB

High density MB
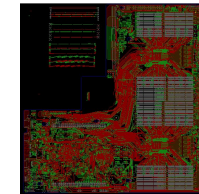
14layers PCB
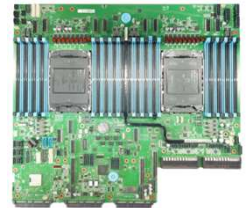
16Layers PCB
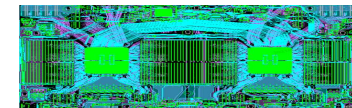
12Layers PCB

Multi-form products design ability

- **2U computing mainstream product**
  - ➤ **X86 server based on EGS architecture**
    - ✓ 5+33 flexible configuration，high modularity, extreme expansion；
    - ✓ Maximum support 24 NVMe or 25+4 Sas/Sata
    - ✓ Support 4 double-wide full-length or 8 single-wide GPUs
  - ➤ **Various configurations meet customers requirement**
    - ✓ Various boards can be flexibly combined to reuce costs
    - ✓ Stack-up is reuced from 16 to 14, saving 20% costs
- **4U AI training and inference integrated server**
  - ➤ Support 21 single-wide or 10 double-wide GPUs, be compatible with domestic and foreign GPUs
  - ➤ Switch backplane support high,medium and low configuraitons

2U server

4U AI server

ME Design

DFX Analysis

Industrial Design
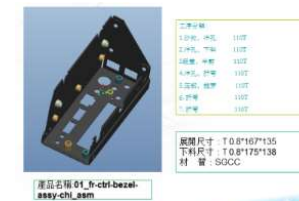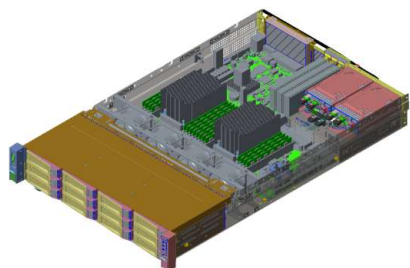
•Tools：AI/Keyshot
•Appearance design
•Ergonomic design
•Recognition system design

•Tools: ProE/AutoCAD
•System architecture scheme design
•System structure design, implementation and verification
•Engineering drawing design

•Subsidence strength analysis
•Impact stress analysis
•Packaging drop analysis
•Hard - disk vibration analysis

Simulation Analysis

•Drawing Tolerance Analysis
•NCT Process Analysis
•Mold Process Analysis
•Surface Treatment Process Analysis

Thermal Simulation

- Tools: Flotherm/Icepak
- System architecture evaluation
- Air duct design
- Preliminary heat sink/fan desig

Thermal Design

- System overall heat dissipation scheme design
- Design and selection of heat dissipation components (heat sink, fan, air guide cover, etc.)
- Heat dissipation design for general components

Thermal Verification

- Equipment: constant - temperature and - humidity cabinets
- System/component flow - resistance testing
- Performance testing of heat - dissipation component

Fan control &noise control

- Efficient and energy-saving PID closed-loop fan control.
- Semi-anechoic chamber: noise testing and optimization of system under typical working conditions

OPERATE

Supply chain

Supply chain management strategy

Suppliers integration	VMI	E-procurement	Alternative solution
Cost saving	Inventory optimization	continuous improvement	Business distribution

Supplier management

New supplier development
- Minimum Threshold
- framework agreement
- Standardization of purchasing behavior
- Customer's supplier localization

Continuous improvement
- Customer quality weekly meeting
- Bi-weekly customer quality reports
- Supplier monthly KPI review
- Supplier annual audit

supplier relationship management
- Regular high-level interaction
- Instant communication between technology and quality
- Electronic assessment
- Various checking methods
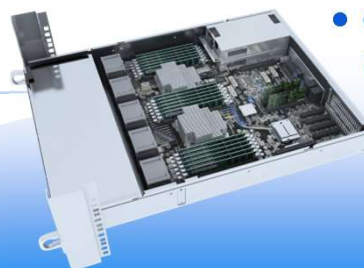
NMCLOUD 云聚智能

Strong IC supply chain
original factory, agents, distributors close cooperation

intel · BROADCOM · Phytium 飞腾 · HEXAFLAKE 海飞科 · TEXAS INSTRUMENTS · infineon · MPS · NXP · MARVELL

MICROCHIP · 3PEAK INCORPORATED · ANALOG DEVICES · XILINX · SILICON LABS · SILERGY

运营能力 OPERATE

Quality Policy

Quality Objectives & Goals

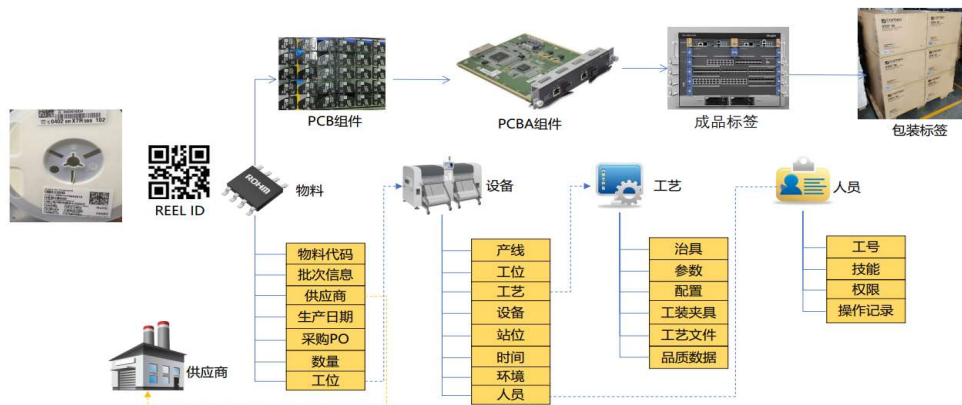| **Quality planning**	**Incoming material quality control**	**Process quality control**	**Outgoing quality control**
◆ Set quality objectives ◆ Risk analysis (FMEA) ◆ Risk item identification ◆ Measurement systems analysis(MSA) ◆ Process capability analysis (SPC) ◆ Control plan (CP) ◆ PPAP/process audit	◆ Vendor certification ◆ Supplier quality management ◆ Supplier performance appraisal system ◆ Material qualification ◆ IQC incoming inspection ◆ MRB&SCAR ◆ Material isolation and locking	◆ Change management ◆ MES System and traceability ◆ FAI Management ◆ Process monitoring and precise sampling ◆ Handling of abnormal and unqualified products ◆ Workshop environment and ESD management ◆ Humidity sensitive device (MSD) management	◆ OQC outgoing quality control (AQL) ◆ OQC disposition of nonconformity ◆ Customer return processing (RMA) ◆ Customer feedback ◆ Deal with customer complaint ◆ Customer satisfaction
Quality planning based on APQP	**Quality control of suppliers and incoming materials**	**Production process quality control**	**Delivery quality control and after-sales**

Quality Management System & Quality Programs

Main production equipment

Screen printer GKG

SPI VSP3000-D

Pick & placement Panasonic NPM-W2

Full nitrogen reflow welding Sonic 13 zone

Full nitrogen wave soldering VIP-610N

Automatic De-paneling

3D AOI VS7000

**Automatic Laser marking**

Automatic X-Ray Detection

Double side AOI

Product assembly (PCBA) process capability

PCB size：610~510mm
PCB thickness：0.5~6mm
Minimum component：01005
BGA minimum pitch：0.3mm
SMT component maximum weight：168g

Full wash-free process.
Lead-free process.
Nitrogen Reflow & Vapor Reflow.
Nitrogen wave soldering （Ultrasonic spray, spoiler waves）.
PTH component Pick & Insertion (PIP) .
Corner Bonding.
Mounting welding of products designed for Top and Bottom side mount & through-hole components.
Straddle connector manufacturing process
Press-fit process.

IC component

LGA

QFP component

01005 component

BGA component

Press –fit component

VGA component

DIMM component
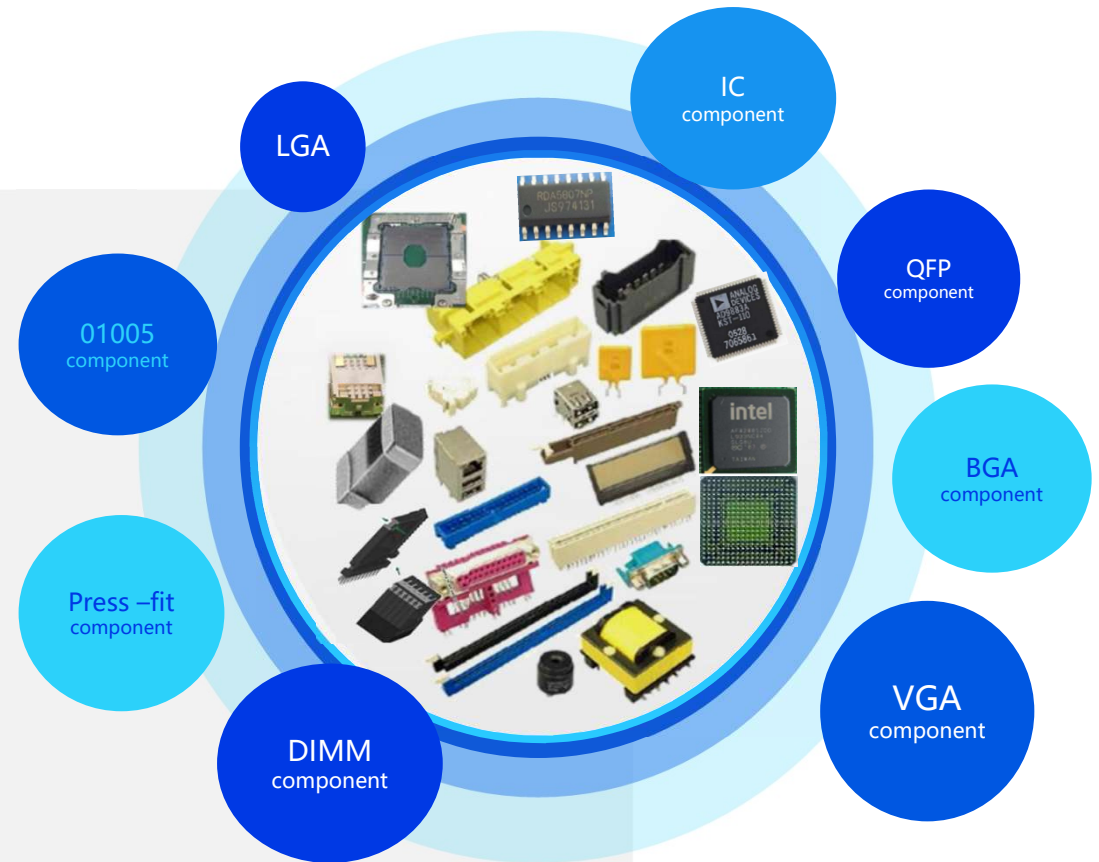
System assembly(BOX BUILD) Workshop：

Workshop：
Production ： 2 Lines
Packaging ： 2Lines

Testing、Aging stations:
130 in the first phase,
240 in the second phase.

Productions:
Server, Telecom, Industrial ,
Medical modules

Load-bearing： <150Kg

Product size:
Length （780~953mm)
Breadth （447~536mm)
Altitude （45~356mm)

Production Line
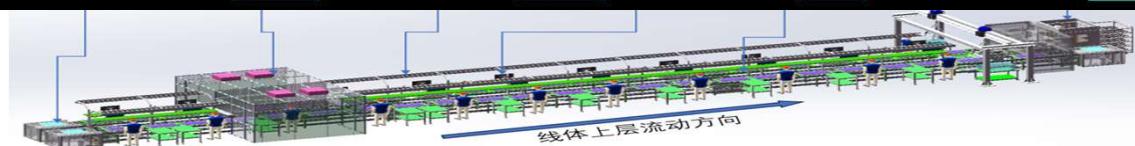
PCBA (Dust-Free plant)Capability：

- PCB size：610~510mm (NPM W2+D3A+TT2)
  PCB thickness：0.5~6mm
  Minimum component：01005
  BGA minimum pitch：0.3mm
  SMT component maximum weight：168g

- Full wash-free process.
  Lead-free process.
  Nitrogen Reflow & Vapor Reflow.
  Nitrogen wave soldering（Ultrasonic spray, spoiler waves）.
  PTH component Pick & Insertion (PIP) .
  Corner Bonding.

- Mounting welding of products designed for Top and Botto
  side mount & through-hole components.
  Straddle connector manufacturing process
  Press-fit process.

System assembly(BOX BUILD) Workshop：

Capacity:
50,000 AI Servers in the first phase
100,000 AI Servers in 2nd phase

Workshop：
Production ： 2 Lines
Packaging ： 2 Lines
Testing、Aging stations:
170 in the first phase,
300 in the 2nd phase.

Productions:
AI Servers, modules

Environment：
ESD Control
100K Class Clean workshop

Load-bearing： 150Kg
Product size:
Length （780~953mm） Breadth
（447~536mm） Altitude
（45~356mm）

ADVANTAGE

R&D ability

- Complete R&D organization structure, including hardware and software development, system adaptation, testing, structural design, etc.

- Core R & D team have more than 10 years of industry experience.

- With mature X86/ Xinchuang /AI/edge server, GPU card, intelligent module, industrial control design capabilities.

Operation ability

- Twenty years of close cooperation in global supply chain
- SMT、DIP、 Testing, system assembly one-stop efficient intelligent manufacturing services.

- Flexible plan, suitable for ODM/JDM/OEM and multi cooperation modes
- Lean manufacturing system.

MACLOUD
云聚智能

Teamwork

- Customer first, quick response, accurate execution.
- Focus on solving problems and getting things right done one time.

- Continue to benchmark learning and embrace change.
- Persist in hard work and dedication，Great things happen when many minds come together.
- Co-create and share.

Total Quality

- Full participation, continuous improvement.

- Zero defect quality awareness, PDCA closed loop.

- MES full traceability, repeat improvement, "never repeat"

2024

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深圳市云聚智能电子科技有限公司

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