

High Value-Added Manufacturing Services



C O N T E N T S

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About **SESUNG**



Sesung Co., Ltd. is a specialist electronics manufacturing services (EMS) company providing a **Total EMS Solution** that spans design, production, and quality control — delivering high-quality, customer-tailored products with consistent reliability.

We operate the entire workflow — from design through processing, inspection, and shipment — as a rapid, **One-Stop / One-Flow** service, securing both **stable quality** and **delivery competitiveness**.

Building on years of accumulated technical expertise and production experience, we contribute to our customers' competitiveness through **continuous process improvement** and **quality innovation**.

Company Introduction

As a specialist in electronics manufacturing services, Sesung Co., Ltd. produces according to defined standards and procedures, and warrants the quality of every product delivered — all in pursuit of value for our customers.

- | | | | |
|-----------------------|-------------------|-------------------------|-------------------------|
| • Company Name | Sesung Co., Ltd. | • Business Areas | PREMIUM EMS |
| • Established | April 1999 | | Components Distribution |
| • Website | www.sesung.com | | Mechanical Precision |
| • E-Mail | sesung@sesung.com | | Mold & Injection |

ISO 9001
ISO14001

SCM
VMI

MOLD INJECTION

MECHANICAL
PRECISION

- | | |
|--|---|
| <ul style="list-style-type: none"> • Daegu Headquarter
98, Waterpolis-ro, Buk-gu, Daegu, Republic of Korea
T. +82-53-312-1075 F. 82-53-312-1077 • Gumi Plant
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Chungcheongnam-do, Republic of Korea
T. +82-41-569-0277 F. +82-41-569-0278 |
|--|---|

Company History

SINCE 1999 - HIGH VALUE SERVICE

- | | |
|--|--|
| <p>2025 11 Awarded the USD 7 Million Export Tower</p> <p>2023 10 Selected as a Top Job-Creating Company in the Environmental Industry
Selected as a TOP Electronic Manufacturing</p> <p>2022 09 Service Company in APAC 2022
Obtained KOLAS Accreditation</p> <p>04 Selected as an Excellent Environmental Industry Enterprise</p> <p>2021 11 Selected for the Green New Deal Promising Companies 100
11 Awarded the USD 5 Million Export Tower
Selected as one of the National Innovation Champions 1000</p> <p>05 Registered as an IPC member and designated as a Global Hidden-Champion SME</p> <p>2020 05 Achieved DEKRA CoPC Qualification</p> <p>2019 11 Registered as an IPC member and obtained IPC-A-610,
06 IPC-7711 and IPC-7721 certifications
Received a commendation from the Minister of Environment</p> <p>2018 11 Obtained TS 16949 certification</p> <p>2016 11 Obtained IPC J-STD-001 certification</p> <p>2015 11 Selected as Lead Company for a Ministry of Environment
09 National R&D Project</p> <p>2014 04 Selected as an Outstanding Job-Creating Company (Presidential Citation)</p> <p>2012 03 Established the Cheonan Plant; received Model Taxpayer commendation</p> | <p>2010 01 Launched LED Lighting Premium EMS;
designated agent for Future Lighting Solutions and Lumileds
(Sesung Family Company)</p> <p>2009 01 Established a corporate R&D center (Chilgok plant);
obtained INNO-BIZ certification</p> <p>2008 01 Obtained KEMA/UL certification for explosion-proof equipment manufacturing</p> <p>2007 11 Awarded the USD 3 Million Export Tower
01 Obtained ISO 14001 certification; selected as MAIN-BIZ and
a Promising Export SME</p> <p>2006 11 Awarded the USD 1 Million Export Tower
01 Specialised in Premium EMS for explosion-proof and industrial products</p> <p>2005 04 Obtained ISO 9001 certification
01 Authorised distributor for Rafael Korea and Kodenshi Korea</p> <p>2003 01 Multi-product manufacturing of CCFLs and video equipment
(karaoke systems, PDP/LCD TVs, AHSLX, TimeLapse, etc.)</p> <p>2002 01 Selected for an SME Technology Development Project by MOTIE
(TPMS); started UPS production</p> <p>2001 07 Launched the Premium EMS business</p> <p>2000 01 Developed an internet phone and obtained patents; production/
sales of communications equipment (switching hubs)</p> <p>1999 04 Established Sesung</p> |
|--|--|

Organizational Chart

Through a structured organisation and a quality-first management approach, we deliver fast, accurate services tailored to each customer's needs.



Management Support Div.



Components Sales Div.



EMS Div.



Precision Machining Div.



Mold & Injection Div.



R&D Center

WHY SESUNG PREMIUM EMS?

Manufacturing — as simple as online shopping!



All In One Manufacturing Service

Through vertical integration of the entire manufacturing process — including R&D — we have built a mutual-growth system that meets customer demand with both technology and quality.



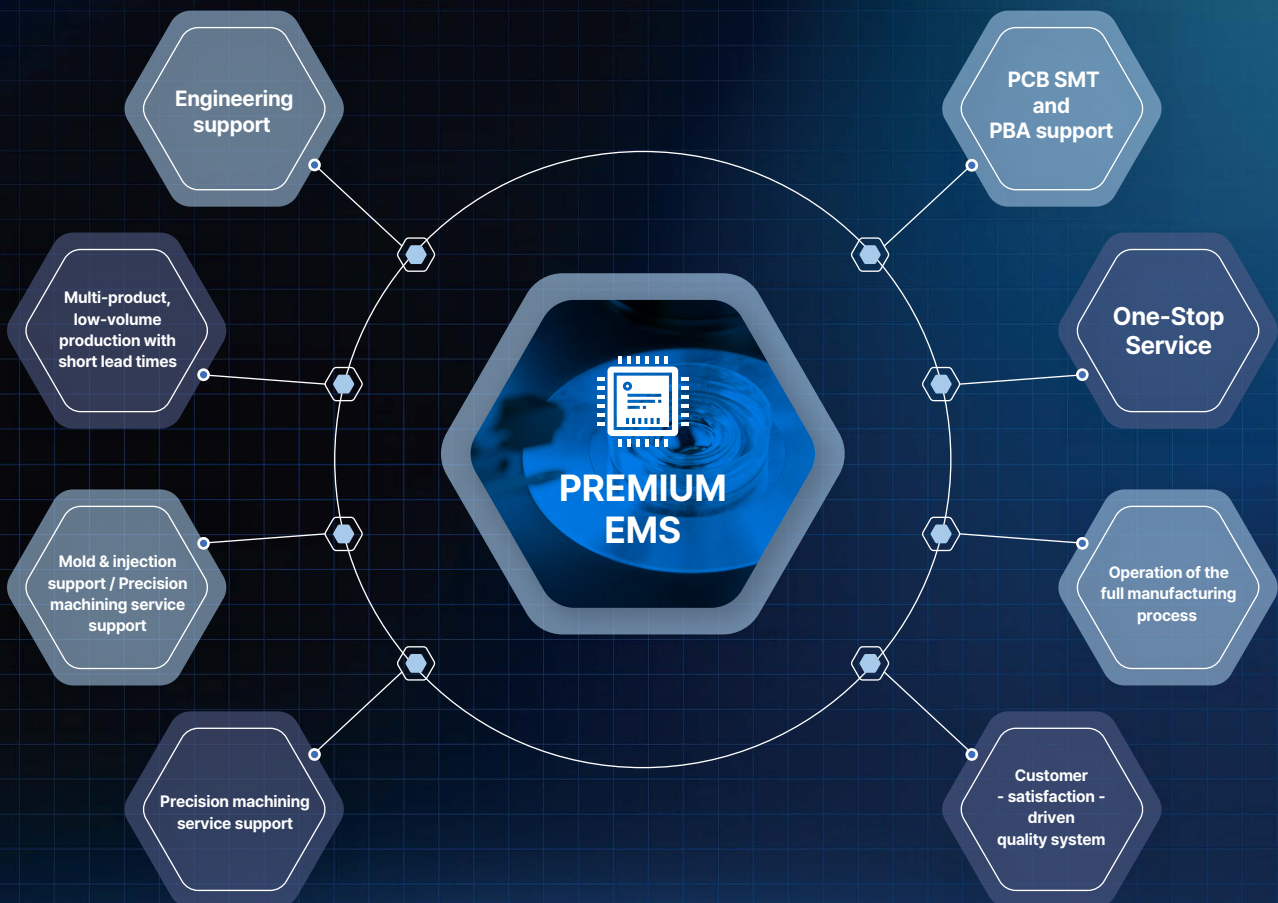
High Value Added Service

Design & engineering support · FMS (Flexible Manufacturing System) / Global material procurement / Order fulfilment / RMA / IPC member



One Stop Service

Electronics Manufacturing Service · Precision Machining Service · Mold & Injection Service with Q-Program · Global SCM Network



Manufacturing Service Map

MAN

- Continuous training of dedicated manufacturing personnel
- R&D, technical, management and production capabilities

METHOD

- A quality-certification system that meets customer requirements
- In-house plants ready for capacity expansion

MACHINE

- In-house ownership of the entire manufacturing process and major equipment
- SMT and automated (outsourced) processes
- Manual insertion, ASSL, set assembly
- In-house line operation

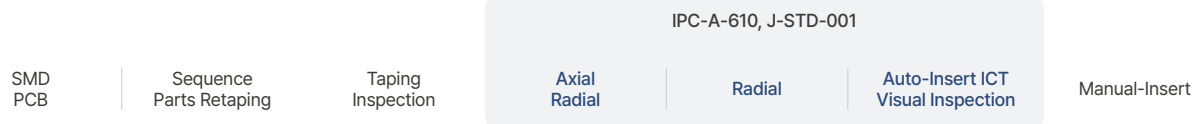
MATERIAL

- Flexible procurement capabilities
- Customer-dedicated stock management
- From multi-product, small batches to high-volume production

SMD PROCESS



AUTO-INSERT PROCESS



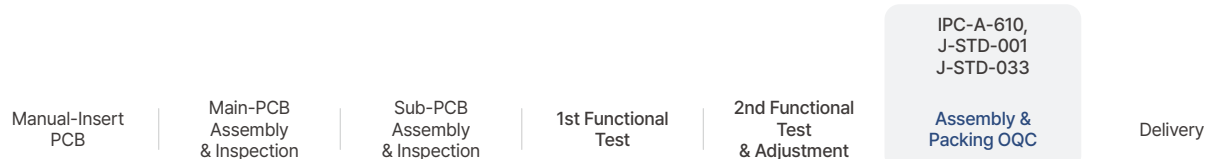
ASSL PROCESS



MANUAL-INSERT PROCESS



FINISHING PROCESS



Precision Machining Service

A multi-product, low-volume precision-machining specialist
A specialist in ATEX-compliant precision-machined components

We provide tailored precision-machining services that match each customer's requirements and guarantee customer satisfaction by ensuring the highest precision-machining quality (Best Quality).

01

PROCESSING (FIRST)

- Machining(MCT)
- CNC



02

PROCESSING (SECOND)

- Knurling
- Hexagon Punching
- Rolling
- Dot Marking



03

CLEANING

- Ultrasonic cleaning
- Solvent cleaning



04

INSPECTION

- Air Gauge
- Go&Go No G-gauge
- Micro Meter
- CMM (Coordinate Measuring Machine)



05

SHIPPING

- OQC
- Inspection Report
- Shipping



Mold & Injection Services

As the process that turns manufacturing into a finished product, our industry-leading, standardized Mold/Injection process — the Q-Program — enables us to manufacture and deliver products in the way best suited to each customer's needs.

Q – Basic

Core lead time: 7–15 days

Cost

30–50% of mass-production tooling

Mold base

Q-Program mold base

Core materia

Aluminum (DR 7079)

Mold service life guarantee

1,000 shots

Q-Advance

Core lead time: 10–20 days

Cost

50–60% of mass-production tooling

Mold base

Our in-house Q-Program mold base

Core materia

HP4M, SKD61, NAK80, STAVAX

Mold service life guarantee

50,000 shots

Q-Pro

**Core lead time: 25–30 days
(including mold-base fabrication)**

Cost

Mass-production tooling
(additional cost: 50–60% of mass-production tooling)

Mold base

Dedicated Q-Pro mold base, custom-built

Core materia

KP4M (P20), STD61 (H13),
NAK80 (P21), STAVAX (420), etc.

Mold service life guarantee

200,000 shots

Q-Mass

**25–30 days
(including mold-base fabrication)**

Cost

Mass-production tooling

Mold base

Various mold-base configurations

Core materia

KP4M (P20), STD61 (H13),
NAK80 (P21), STAVAX (420), etc.

Mold service life guarantee

400,000 shots

Production Equipment

SMT Line

3 lines in operation at the Chilgok Plant



Selective Soldering / In Line

1 line in operation at the Chilgok Plant



Conformal Coating Line

3 lines in operation at the Chilgok Plant



- Equipment that applies a coating liquid to PCB surfaces and mounted components, protecting the board from solder balls and moisture — essential for high-tech industries such as defense and automotive.

Water Clean Machine



- PCB aqueous cleaning using DI water
- Cleaning level meeting or exceeding Mil-spec quality
 - Removes foreign particles and flux
 - Removes oxidation, oil and oily-film contaminants
 - Applied for cleaning prior to PCB coating
- Product of Aqueous Technologies (USA)

PCB Router



- Guarded separation of PCBA panels, protecting against impact during depanelling
- AC 220V 50/60Hz $\pm 10\%$ 1KVA
- Operating temperature: 0–40 °C
- Dimensions
 - Width: 2,100 mm
 - Length: 1,250 mm
 - Height: 1,800 mm

In Circuit PCB Test



- Equipment for verifying component polarity, shorts and open circuits
- Detects missing, misplaced and reversed components, as well as value/capacity errors

Automatic Function Test Inspection



- Virtual emulation and response for each voltage, current and functional condition of the product
- In-house design and build of frames and fixtures
- Communication: I²C, SMBus, TCP/IP, CAN, RS-485, etc
 - Compatible with any programming environment
- High-performance verification systems built with NI DAQ & PXI, plus control of all test equipment with embedded communications
 - SMPS, OSC, DMM, etc.

Flying Probe Tester



- Tester that performs PCB inspection by making electrical contact at each test point with moving probes instead of fixed pins
- Integrated equipment that automatically generates the test program from design data, runs electrical inspection and quickly identifies defects

Reliability Test Equipment

X-Ray Machine / Chilgok Plant



- X Ray Inspection
 - Short
 - Solder distribution
 - Void
- J-STD-001 Content 7.5.15 (BGA)
- Applied to critical components (BGA, IC) after AOI

CHAMBER



- ESS chamber temperature
 - humidity unit: 800 L x 1, -70 °C to 180 °C
 - ramp -45 °C ⇌ +155 °C within 15 °C/min
- Temperature/humidity chambers
 - R&D Center: 400 L x 4, 600 L x 2
 - Chilgok Plant: 800 L x 1, 600 L x 2, 300 L dual x 1
- Temperature chambers
 - Chilgok Plant: 800 L x 2
 - temperature -70 °C to +150 °C
 - humidity 0% to 100%

Gas Automation System / R&D Center



- Gas Blending
- Chamber control
- Data logging

3D Measurement System (CMM)



- Product: CNC coordinate measuring machine (contact type)
- MODEL : CRYSTA-Apex V776
- Measurement range
 - X(700mm)
 - Y(700mm)
 - Z(600mm)

Production Equipment (Precision Machining)

CNC



- **PUMA GT2100**

Max. cutting diameter: 390 mm
Max. cutting length: 562 mm
Standard chuck size: 8 inch



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Max. cutting diameter: 390 mm
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- **5-AXIS VERTICAL MACHINING CENTER**

planned introduction

MCT



- **MYNX5400 (MCT-MILLING)**

X,Y,Z:
1020 × 540 × 530 mm
Max. spindle speed:
8,000rpm



- **MYNX6500 (MCT-MILLING)**

X,Y,Z:
1270 × 670 × 530 mm
Max. spindle speed
8,000 rpm



- **VC340**

X,Y,Z:
560 × 430 × 570 mm
Max. spindle speed
10,000 rpm
2 tables



- **DT-400 (Tapping Center)**

X,Y,Z:
520 × 400 × 350 mm
Max. spindle speed:
8,000 rpm



- **Multi-axis Milling M/C #2**

NSM-T (4-axis)

Inspection Equipment



- **CMM**

CRYSTA-Apex
V776



- **ILLUMINANCE METER**

for surface-roughness
measurement



- **AIR GAUGE EA-100N**



- **GO/NO RING GAUGE**

M3-M87
(20+ types)



- **GO/NO PLUG GAUGE**

M3-M87
(20+ types)

Production Equipment (Injection Molding)



- **Injection Molding Machine**
Woojin Plaimm NE580 (580ton)



- **Injection Molding Machine**
Woojin Plaimm TD-G5 380 (380ton)



- **Injection Molding Machine**
Woojin Plaimm TB240G5 (240ton)



- **Injection Molding Machine**
Woojin Plaimm TB160 (160ton)



- **Injection Molding Machine**
Woojin Plaimm TB160G5 (160ton)



- **Injection Molding Machine**
Woojin Plaimm NE130 (130ton)



- **Injection Molding Machine**
Dong HYDATics Pro150 (150ton)



- **Injection Molding Machine**
Dong HYDATics Pro150 (Nozzle spec, 120 ton)



- **Mheating Machine**
YODO FOS-160



- **Chiller**
LIMITED EDITION
SS-3304L



- **EMI AUTO
SPARY MACHINE**
JIWON HI TECH



- **Oven Dryer**
WOOJEON MACHINE
8Kw



- **CONDENSATION
DEHUMIDIFYING DRYER**
Daehan Electric
Polished Cone DHCD-50

Products (Industry)

Toxic-gas detectors, power-line communication modules, pneumatic-pressure checkers, UPS units, fire-safety equipment, etc., as well as consumer products such as LCD/PDP TVs, digital/fingerprint door locks and TimeLapse VCRs.



Products (Defense)

Tailored manufacturing services for military, aerospace and high-reliability systems



Defense-product PCBAs for the display system of the K-9 Self-Propelled Howitzer

Since January 2004

PCBA supply began



Defense-product electronic fuze modules for the Chunmoo (CTM) MLRS

Since March 2004

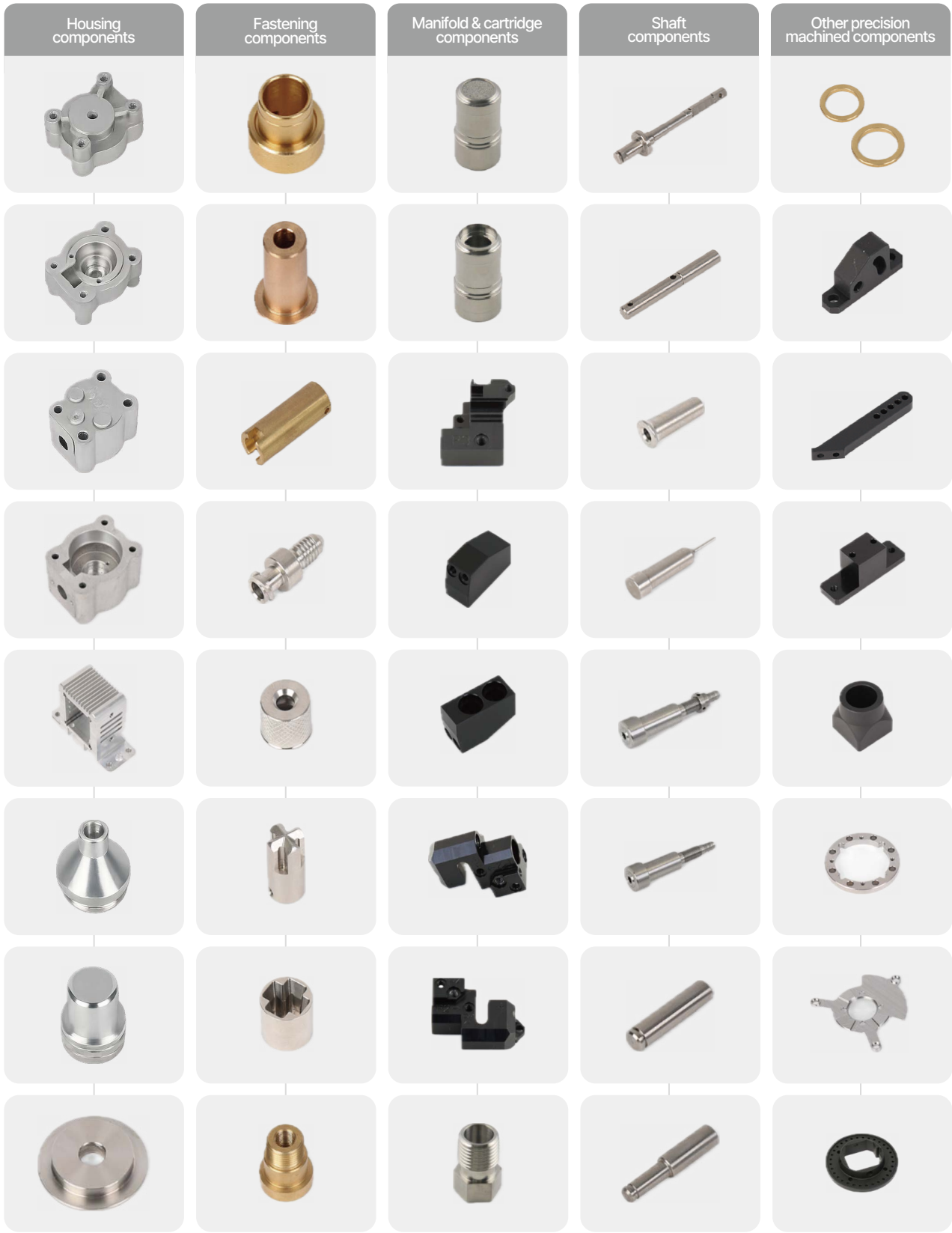
Fuze module production

Currently in production



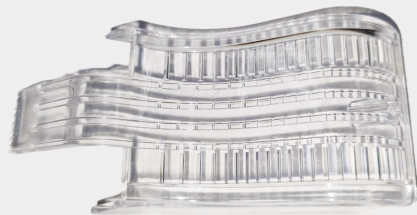
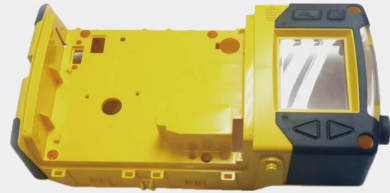
Products

Precision Machining



Products

Mold & Injection



(Image-only: examples of injection-molded housing and case components)

Engineering Support (R&D Center)

R&D TEST LABORATORY

The Sesung R&D Center delivers worldclass quality through a systematic, structured process.



SUPPORT

- support from the initial (design) stage of new projects
- DV (Design Verification) & PV (Product Verification)
- Test Support

01



IN-HOUSE DEVELOPMENT

- In-house S/W and H/W (circuit and mechanical) development capabilities

02



SYSTEMATISATION

- Engineering support backed by structured experience

03

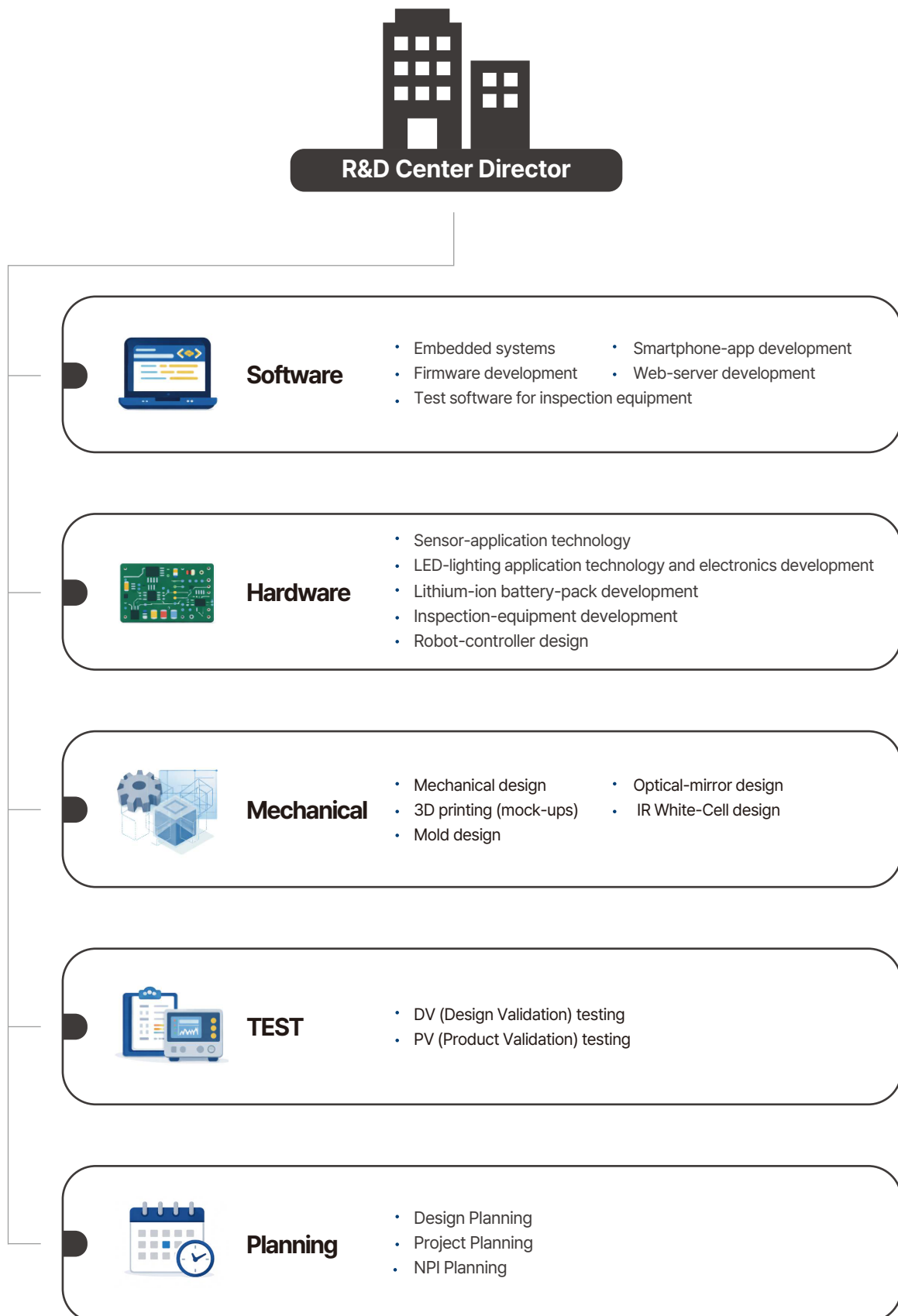


SPECIALISATION

- KOLAS-accredited
- Specialist Gas Blending & Automation Systems

04

R&D Center Organization Chart



Project Status

Project	Key Specifications
Smart IoT module development	- Monitoring main controller - IO-module control - Display module - Measurement-notification and alarm functions - SLOT-type module mounting - m4d, mv, Modbus modules - Output (mA, Relay-included)
Development of a portable multi medium/multi-parameter hazardous-chemical detector	- FTIR spectroscopy - Equipped with electrochemical sensors (Cl, F₂, H₂S, etc.) - Wireless data communication (indoor/outdoor app monitoring) - GPS-based equipment location tracking
Development of a PFC gas detector for toxic-gas leak detection in semiconductor fabs	- Optical gas detector - Optical-signal-processing development - Signal-acquisition and processing algorithms - In-house prototype using our proven process
An IT-converged road-traffic safety-guardian robot	- Road-environment speed measurement - Speed-data development - Robot structural design & development - Robot-control unit development 4G communication - Telescopic mechanism - development
Smart welfare-vehicle development to assist mobility and standing for transport-disadvantaged users	- Design and fabrication of a mobile platform - Mechanical design and loading (gas-spring-equipped) - Active-safety system development (collision prevention and avoidance)
Intelligent unmanned feeding robot	- Autonomous robot that supplies feed in livestock barns - Electromagnetic-induction guidance - Individual feed-volume adjustment using RFID tags
IoT-based AR FPS application content and end-system development	- AR system implementation - Bluetooth communication - Circuit design and firmware development - Product and mechanical design - LBS based real-time user-location tracking - Game DATA SERVER management - Web-page implementation
Korean-domestic supply-system development for Post-Tier-4 compliant 1,000 hp class non-road diesel engines and NOx reduction	- H/W design of pump modules - DCU sensing board development - Sensor-applied app/application software - Build-out of an RCP control environment for dosing-control algorithm development

Certifications



THE STANDARD IN SAFETY



Regular Surveillance Audit
from Customers and Cert. body



CERTIFICAÇÕES
do Brasil

INNOBIZ

Certified by Government
for the Management Technology
Value Innovation

MAINBiz

Certified by SMBA
(Government) for the Production
Marketing System

Key Customers & Partners

Honeywell



HANCOM



HL Mando



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Electronics Manufacturing Service



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