



YOUNG POONG
ELECTRONICS CO., LTD.



Strategic changes and new concept of challenges
focused on National Defense Objective

Good Mindset

to impress our customers

YoungPoong Electronics is a specialized company in the field of electric and electronic control systems for ground, aerospace, marine and guided weapon market, contributing to strengthening military defense capability by securing the state-of-the-art technologies leading miliTECH4.0.

Global Technology Innovation Leading Enterprise



Sustainable Growth

More growth with YoungPoong



Customer Impression

More innovation for Customers



Corporate value Creation

More challenge for tomorrow

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EXCELLENT VALUE CREATOR FOR CUSTOMERS

Based on our enhanced quality control process and quality management system (DQMS, KS Q 9100:2018 (AS9100D, EN9100:2018 and JIS Q 9100:2016), PMS Level4+, Software Process Level2, etc.) for more than 30 years, we make ceaseless effort for customers' productivity and added value through constant change and technological innovation with passion.



Provide Global Service



Strengthen Manufacturing / Quality Competitiveness



Expand into New Business



Establish Smart Management Environment



HISTORY

Since 1986



▪ **Head Office & Plant** Changwon
Product development & Manufacturing & Quality Assurance



▪ **R&D Center** Daejeon
Research & Development



▪ **Sales Office** Seongnam
Sales & Marketing, R&D

- 1986** Establish Young Poong Electronics
- 1997** Incorporation of going business
- 1999** ISO9001 certified
- 2005** Establish R&D center in Daejeon, DQMS certified(DTaQ)
- 2006** INNO-BIZ certified(SMBA)
- 2007** Venture Company certified
- 2011** AS9100 certified
- 2012** Build R&D Center in Daejeon, CMMI Level 3 certified
- 2013** J-STD-001 Specialist acquired, IPC-A-610 Trainer acquired
- 2014** Selected as Small but Strong Company (Ministry of Employment and Labor)
- 2015** PMS Level4+ certified, Software Process Level2 certified
- 2016** Selected as Innovative Company (Ministry of SMEs and Startups)
- 2018** Excellent Employment Company certified (Governor of GyeongNam Province)
- 2019** KICOX Global leading company certified, (Korea Industrial Complex Corporation) Designated as Promising Export Small and Medium Enterprise (Ministry of SMEs and Startups)
- 2020** Selected as Small but Strong Company in Changwon-city, Main-Biz certified (Ministry of SMEs and Startups), Export Business for Defense material

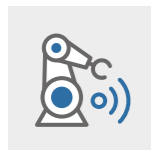


- 2007** Presidential Silver Award for Quality Competition
- 2010** Minister of National Defense Award for Parts Localization
- 2012** Presidential Award for Excellent Localization Development
- 2017** Presidential Award for Defense Quality Management
Defense Agency for Technology and Quality Award for Defense Quality Management
- 2018** Defense Acquisition Program Administration Award for ISI Localization Development
- 2020** Defense Agency for Technology and Quality Award for Military Supplies Field Quality · Technology Innovation Contest

R&D DIRECTION

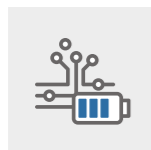
Powered by Technological Innovation

To secure high reliability in various systems and meet special performance and environmental conditions in each product, the company continues to improve performance through R&D and full reliability by thorough verification.



Motion Control

- Servo control, inverter design and interface technology
- PID, Feed Forward, TDC and Robust control algorithm design technology
- Disturbance overcoming algorithm design technology for tracking control and attitude stabilization
- Complex modeling and simulation technology for optimal performance



Power Management

- High-efficiency power converter design technology to minimize power loss
- Two-way power conversion algorithm for reusing regenerative energy
- Hybrid power efficiency optimization and power distribution algorithm



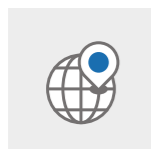
Embedded Software

- GUI design technology that provides optimized user convenience
- Real-time application technology for real-time data acquisition and processing
- Target tracking and shooting control technology by image acquisition and image processing



Turret & Actuator

- Optimized power transmission system and structure design technology
- M&S technology for mechanical structure and rigidity analysis
- High torque stabilization system design and simulation technology for overcoming disturbances



Inertial Sensor Application

- INS/GPS individual and complex navigation system design technology
- Navigation sensor bias and mis-alignment compensation algorithm design technology
- Navigation and attitude calculation optimization algorithm design technology using techniques such as Kalman filter and complementary filter

OUR SERVICE PORTFOLIO

Customized Solutions for the Best Performance

The company implements customer satisfaction through performing successful missions in response to the rapidly evolving technological development.

Mission-Critical Role



Design Analysis



Software Development



Production



Quality Assurance



Test & Evaluation



Maintenance

01



Motion Control

02



Guided
Weapon Control

03



Missile
Launcher System

04



EO/IR System

05



Avionics
(Rotary-Wing)

05



Avionics
(Fixed-Wing / ETS)

06



Unmanned
System

07



Navigation
System

08



HMI (Human-
Machine Interface)

09



Embedded System

01

Motion Control

- Servo Drive Technology
- Sensor Monitoring Technology
- Actuator - Design & Analysis Technology
- Multi-Axes Trajectory Motion Technology
- Electromechanical Stabilization Technology
- Turret & System Power Control Technology



Multi-Axes Servo Control Unit

Servo Control Unit drives the motor (location and speed control, etc.) and monitors sensors so that various ammunition loading and supply devices can be activated within a robotic ammunition carrier



Launcher Control Unit

Monitors conditions of components including various sensors, power supplies and motors, and controls azimuth and elevation drive of launchers according to the command of the main controller



Servo Amplifier & Servo Control Unit

Controls azimuth of turrets and elevation driving and stabilizing of cannons by controlling the motor based on profiles created according to the location command of the main controller



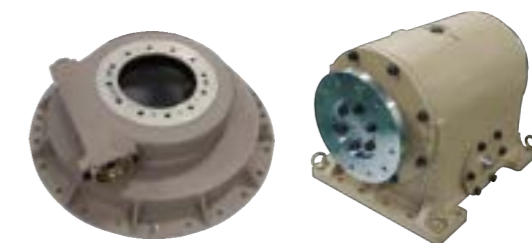
Turret/System Power Control Unit

Power conversion and power distribution (left) for turret control and power monitoring and distribution (right), for equipment of each component system within the carrier



Turret Control Unit

Monitors conditions of components including various sensors, power supplies and motors, and controls azimuth and elevation drive of turrets according to the command of the main controller



Turret Driving Gear Box for Elevation

Planetary gear type reducer, high mechanical efficiency and close to zero backlash, suitable for equipment requiring precision

02

Guided Weapon Control

- Canard Precision Control Technology
- High Torque Fin Drive Technology
- Multi-Axes Actuator Drive Technology
- Optimized Control Technology for PGM
- Multi-Axes Precision Thrust Control Technology



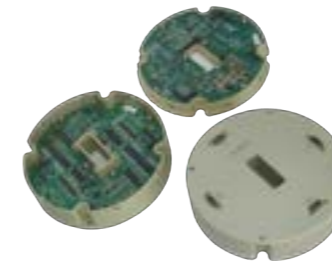
Guidance Fin Driver

Controls electrical and hydrodynamic operators simultaneously with the fin control unit of ground-to-ground guided missiles



Guidance Fin Driver

Performs precision control of four-axis electrical operators with the wing control unit of ground-to-air guided missiles



Rocket Canard Controller

Performs precision control of the canard actuator of four-axis guided rockets through two DSPs and a high-efficiency inverter module



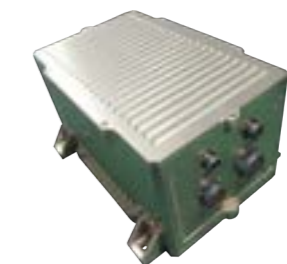
Fin Drive Unit

Compact precision actuator for small guided missiles as four-axis motor actuator of guided missiles, comprising small BLDC motor, ball screws and moment arm



Rocket Canard Controller

Controlling 4 axes of guided rocket's canard with two DSPs and offering high space efficiency thanks to using Rigid-Flexible PCB



Multi-Axes Precision Thrust Controller

Thrust actuator for an instantaneous change of direction of intercept missiles during launching and target tracking



03

Missile Launcher System

- Power Monitoring & Control Technology
- VME Standard Board and Motherboard Design Technology
- Various Types of Communication Technology (SDLC and Ethernet, CAN, Optical, Serial etc.)
- H/W Optimizing, Miniaturizing and Lightening Design Technology
- Wiring Design and Manufacturing Technology for Complex Mix Signals of Various Types
- MicroProcessor, FPGA Application Circuit Design Technology
- Signal Processing and Converting Technology
- Machine Design and Analysis, Circuit Simulation Technology



Launcher Control Unit

Performs communication relay between control consoles and launchers, and monitors and controls launcher condition



Module Control Box

Supplying power for launching systems and the opening and shutting of the hatch of the launcher, controls of every variety of valves



Missile Interface Unit

Delivering shooting order to ballistic missiles with launching system, controlling and monitoring of its situation



Module Control Box/Hatch Drive Unit

Controls hatch motors and feed valves, displays launcher condition (left) and controls the speed and location of hatch motors to open and close hatches



Missile Interface Unit

Delivers the command to identify and control the condition of guided missiles to the Module Control Box



Signal Distribution Unit

Signal distribution between Vertical Launching System (VLS) and control console

04

EO/IR System

- Precision Design Technology for Optical System
- HD-SDI Video Transmission Technology
- Multi-Image Input Processing Interface Technology
- Image Processing Technology
- Image Fusion Technology
- A-I-based Deep Learning Technology



Thermal Driver's Viewer

All-weather day and night uncooled thermal imaging sensor-built operation system. Can be installed in various types of combat vehicles and used in all-weather and battlefield conditions



Fusion System (Single)

One fusion (1 EO + 1 IR) camera mounted on the vehicle
FOV : 64°(h)×50°(v)



Fusion System (2-in-1)

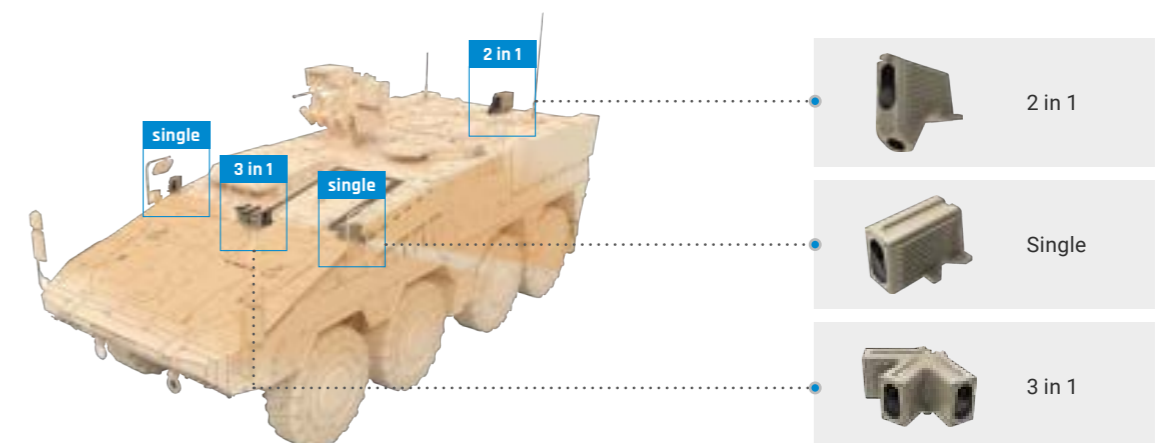
One Fusion (1 EO + 1 IR) camera (up side) and one EO camera (down side) mounted on the vehicle
FOV : 64°(h)×50°(v) (up side), 90°(h)×50°(v)(down side)



Fusion System (3-in-1)

Triple fusion (1 EO + 1 IR) camera mounted on the vehicle
FOV : 180°(h)×50°(v)

I Fusion System Configuration



05

Avionics

Rotary-Wing

- Engine Propeller Gear Torque Computation Technology
- Attitude Calibration & Calculation Technology
- Air-Data Calculation Technology
- Optical NVIS Indicators Design Technology
- Sensor Monitoring & Power Control Technology
- Metal Chip Detection & Burn-Off Technology
- Avionics Communication Technology



Integrated Standby Instrument

ISI is an Attitude & Heading Reference System (AHRS) solution with Air Data Computer. It provides full inertial data (Angles, Rates, Accelerations) and Air Data (Baro altitude, Air speed, Vertical speed)



Integrated Signal Processing Unit

ISPU provides the detected/calculated engine torque signals (dual engine) and detects chip and removes (to burn chip in gear box)



Anti-Icing Controller

Anti-Icing Controller controls the power of heaters installed on the wing, rotor, windshield and engine intake of the aircraft to prevent freezing



Chip Processing Unit

Chip Processing Unit receives the chip detection signal from the chip detector mounted on the gearbox and the engine, generates chip removal signals



Switch & Light Panel Units

NVIS (SAE AS 7788) Lighting Panel Units for cockpit installation. Various types of switches and lamps can be applied according to customer requirements



Electrical Master Box

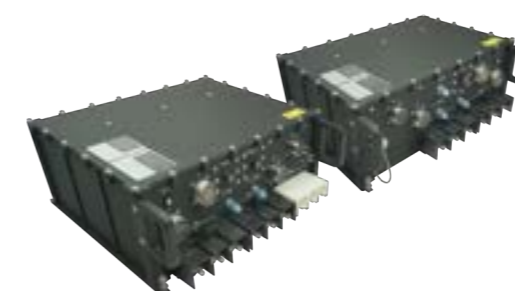
DC Power Distribution Box (DC EMB) distributes 28 VDC DC power supplied from DC generator to each power bus according to aircraft operating conditions and fault conditions with a redundancy system

05

Avionics

Fixed-Wing / ETS

- AC/DC High Power Monitoring, Distribution and Protection Technology
- BLDC Motor Drive and Servo Valve, Solenoid Valve Control Technology
- LVTD Sensing and Mechanical User-Error Prevention Design Technology
- H/W & S/W Actuator Model Design Technology for Control of Flight Control Surfaces
- Real-Time Signal Processing-Based Flight Control Function Technology
- Aircraft PILS/HILS Environment Construction Technology
- Aircraft Sensor Signal Simulation Technology
- Avionics Communication Technology



Electrical Master Unit

Distributes AC power to aircraft AC bus, AC load and TRU Generator and provides aircraft power status to the mission computer, composed of two units for redundancy operation



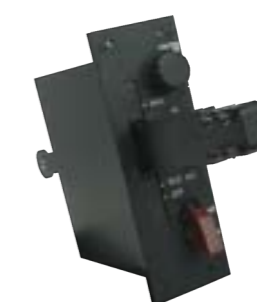
Canopy Actuator System

Controls BLDC motor drive for fighter canopy opening/closing



Steering Control Unit

Controls steering angles of wheels by controlling the Servo Valve and Solenoid Valve for steering systems as KFX's steering control



Throttle Quadrant Assembly

Provides the basic function of adjusting aero engine thrust and secondary functions including lever frictional force control, user-error prevention and emergency secondary throttle



Flight Control Computer ETS

Provides real-time control / measurement of analog and discrete input/output signals of FLCC UUT and provides functional test and various test environment in which interlocked with cockpit simulator, a simulation computer, and a real-actuator



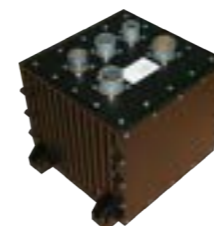
Remote Interface Unit ETS

Approves and measures through realtime simulation of analog and discrete input/output signals to perform the diagnostic function of RIU and its algorithm development. It simulates various signals of RIU, linked with the cockpit simulator as well as system operation-related matters, linked with various subsystems

06

Unmanned Systems

- Attitude Calibration & Calculation Technology
- Air-Data Calculation Technology
- Control Software Design Technology Based on STANAG4586
- Inertial Sensor Application & Algorithm Design Technology
- High Torque/Speed Motor Optimum Design Technology
- Drone System Optimum Design, Dynamics Model Design
- High Wind-Resistance Drone Controller Design Technology
- Anti-Drone System Technology
- Power Monitoring & Distribution Technology



Flight Control Computer

Arithmetic control unit of attitude and flying control, Built-in Navigation Computer



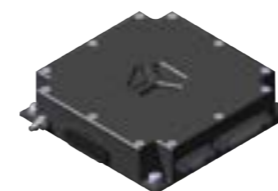
Flight Control System

Automatic flight control system for automatic flight, integrated FCC & INS



UAV Ground Control Software

Various aircraft suitable for operation under a control program based on STANAG4586



Autopilot

Micro-military and industrial drone flight control computer with built-in algorithms for high wind-resistance flight control, automatic precision landing and magnetic field disturbance removal navigation, capable of supporting various drone platforms



Drone

Military and industrial surveillance and reconnaissance drone embedded with high wind-resistance flight control algorithm-applied FCC and high performance EO/IR cameras



Anti Drone System

Program to analyze acquired images and able to recognize the objects of specific targets and their geographical change hour by hour



Power Distribution Unit

Provides power supplied from batteries, generators, and EPU to the connected equipment according to the FCC's instructions and provides real-time voltage / current and power output status to the FCC



Junction Box

Connects and distributes various kinds of signals required in the interior of flight vehicles

07

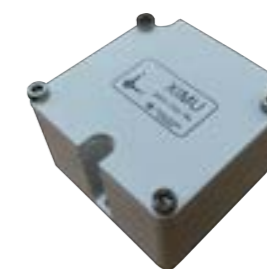
Navigation System

- Sensor Integration Technology (GNSS, IMU, Air-Pressure)
- Inertial Sensor Application Technology
- MEMS(Micro Electro Mechanical) Sensor Calibration Technology
- HRG(High End Grade) Sensor Calibration Technology
- EKF-applied, Algorithm Optimization Design Technology
- GPS/INS/ADS Hybrid Navigation Algorithm Design Technology
- Miniaturizing, Lightning Design Technology



AHRS-300

Provides information of altitudes and azimuth as small and low cost Attitude Heading Reference System based on MEMS



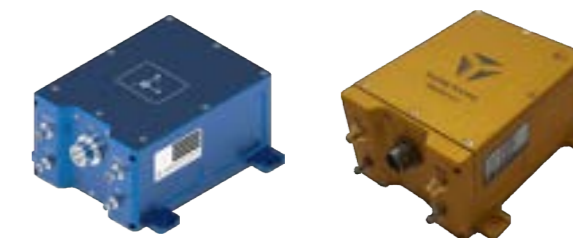
X-IMU(Inertial Measurement Unit)

High-performance inertial measurement unit by using high-end accelerometer and gyro sensor, used for gimbal system, ground launcher, stabilization control



SINU-D

Performance-enhanced version of VINU. In order to minimize the effects of vibration and shock, a damper and a GNSS heading function is additionally applied



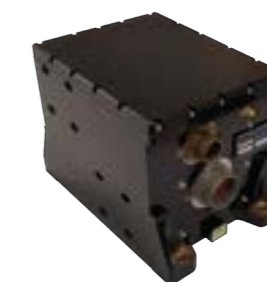
SINU-D-A

Performance-enhanced version of VINU. In order to minimize the effects of vibration and shock, a damper and a GNSS heading function and ADC (Air Data Computer) is additionally applied



VINU(Inertial Navigation Unit)

High precision performance Navigation Unit based on MEMS IMU. Consists of GNSS receiver, pressure sensor, IMU and Magnetometer



OUROS

High precision performance Land Navigation System based on HRG Gyroscope. Provides a long life with high impact resistance without external support, including highest accuracy and shortest alignment time in harsh conditions

08

HMI

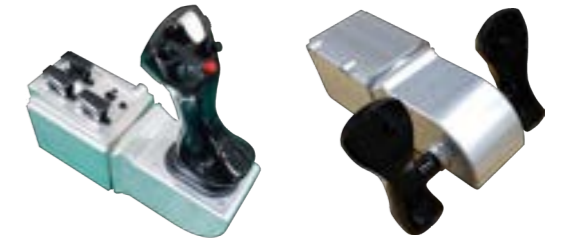
Human-Machine Interface

- Steering Angle Detection Technology of Joystick
- Various Serial Communication Technology
- NVIS Panel Design Technology
- Ergonomic Mechanical Design Technology
- Graphic User Interface for User Convenience



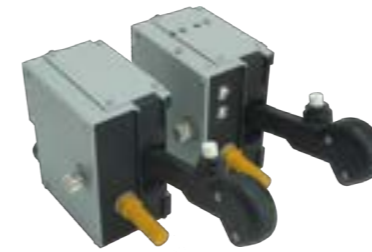
Joystick

Outputs speed instruction of driving system with digital communication and provides various options of communications and switches for system



Joystick

Outputs speed command of the turret drive system through digital communication and provides various options of switches for system operation with a comfortable grip feeling through ergonomic grip design



Landing Gear Handle

Operated through equipment installed front and rear providing a control device manipulating landing gear when the aircraft is taking off or landing



Landing Gear Control Unit

Operated through equipment installed front and rear providing a control device manipulating landing gear when the aircraft is taking off or landing for KT-1 series



Multi-Function Console

Supplying HMI function for controlling command and launch



Display Unit

Enables placement of various functional switches according to customer requirements as a panel-type display for combat vehicles, meeting military environmental conditions

09

Embedded System

- VPX & xTCA System
- Rugged Network System
- MOSA
- Scalability
- Interoperability
- Affordability
- Different standards, Common applications

```

mirror_mod.us
mirror_mod.us
mirror_mod.us
elif_operation
mirror_mod.us
mirror_mod.us_y = False
mirror_mod.us_z = True

```

```

#selection at the end -add back the deselected mirror mo
mirror_ob.select= 1
modifier_ob.select=1
bpy.context.scene.objects.active = modifier_ob
print("Selected" + str(modifier_ob)) # modifier ob is the ac
#mirror_ob.select = 0
name = bpy.context.selected_objects[0]

```



MOSA (Modular Open System Architecture)

Allows to use commercial off the shelf hardware from multiple vendors expecting a good level of interoperability, so avoiding the need for custom designed hardware and avoiding lock in



PICMG & VITA

Advanced-TCA/Micro-TCA and OpenVPX take a similar approach. Both use switched fabrics for high speed interconnects, support different data pipe widths for various applications, and recognize the benefits of platform health management



FMC (FPGA Mezzanine Cards, per VITA 57)

Provides an extremely flexible mechanism for including interface and signal conversion capability into both TCA and VPX systems (per VITA 57)



MILTECH 304

Miniature portable tactical communication switches. Compact Military Fast Ethernet Unmanaged Switch - 4 Port



MILTECH 918

Miniature portable tactical communication switches. Compact Military Gigabit Ethernet Managed Switch - 8 Port



MILTECH 9012C

Miniature portable tactical communication switches. Compact Military Managed 12 Port Gigabit Ethernet Switch/Router with Cisco IOS External Connectivity

HERE FOR FULLY SUPPORT

Pride on the best for defense quality by advanced technology and quality management system. We are well prepared to always show excellent performance with high quality and technology accumulated over a long period of time.

32% Personnel Capability to R&D

70% Engineer with over 10 YOE

12 Intellectual property rights and certificates

128 Quality and Production experts

- Defense Quality Management System, Aerospace Quality Management System
- Establish Quality Assurance System for each phase of quality and production management activities



GLOBAL PARTNER

As a strategic partner of the international electronics industry, YoungPoong Electronics grows together with customers based on global competitiveness through strengthening international defense cooperation.





We are creating the future along with our customers,
and at the center is YoungPoong Electronics.

**“We will become a global leader with an attitude of
Adventure, Challenge, and Winning”**

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