Intelligent, Autonomous & Customized
for Your Mission

INTELLIGENT
FLIGHT CONTROL
SYSTEM

About Us

As the member of Coretronic Group, Coretronic Intelligent Robotics Corporation (CIRC) was built in January, 2018. Taking sensor fusion and core technology for robotics as niche point, CIRC offers full range solutions of commercial robotics. CIRC integrates optical, mechanical, electric, thermal, software design core capability of Coretronic, builds human-computer interaction, motion control, sensing, and navigation technologies, also develops AI, IoT, and technologies for professional fields. We are devoted to design, manufacturing, and services for professional robotics, and machine module, first target is to offer drone hardware platform for security application, and intelligent solutions. CIRC will create unique application value by intelligent robotics, integrating robotics technologies, AI, IoT and professional fields In the future.

Intelligent Flight Control Module

Coretronic Intelligent Robotics Corporation develops the hardware module and closed source flight control software (FCS) . The flight control software could be customized for customer's hardware device. The FCS provides perfect control of the drone so to fly stably, quickly react to sudden events, flies precisely, and redundancy mechanism of the drone is another feature.

We use unique on-edge AI algorithm makes the drone instantly analyze data on edge. Low power consumption make the drone to execute multiple AI functions simultaneously. Such AI algorism only needs small amount of data for learning and deploying missions at the same time, saves calculation time, the efficiency is Improved, there is no need for big data. Expediting the development for unique requirements of different customers is the benefit.

- Highly Integrated FCM with NVIDIA TX1
- Simultaneously Multi-AI Functions Operation
- Extendable HW Architecture with Ultra-high
- Performance AI Chip
- Customized ODM Solution

NVIDIA

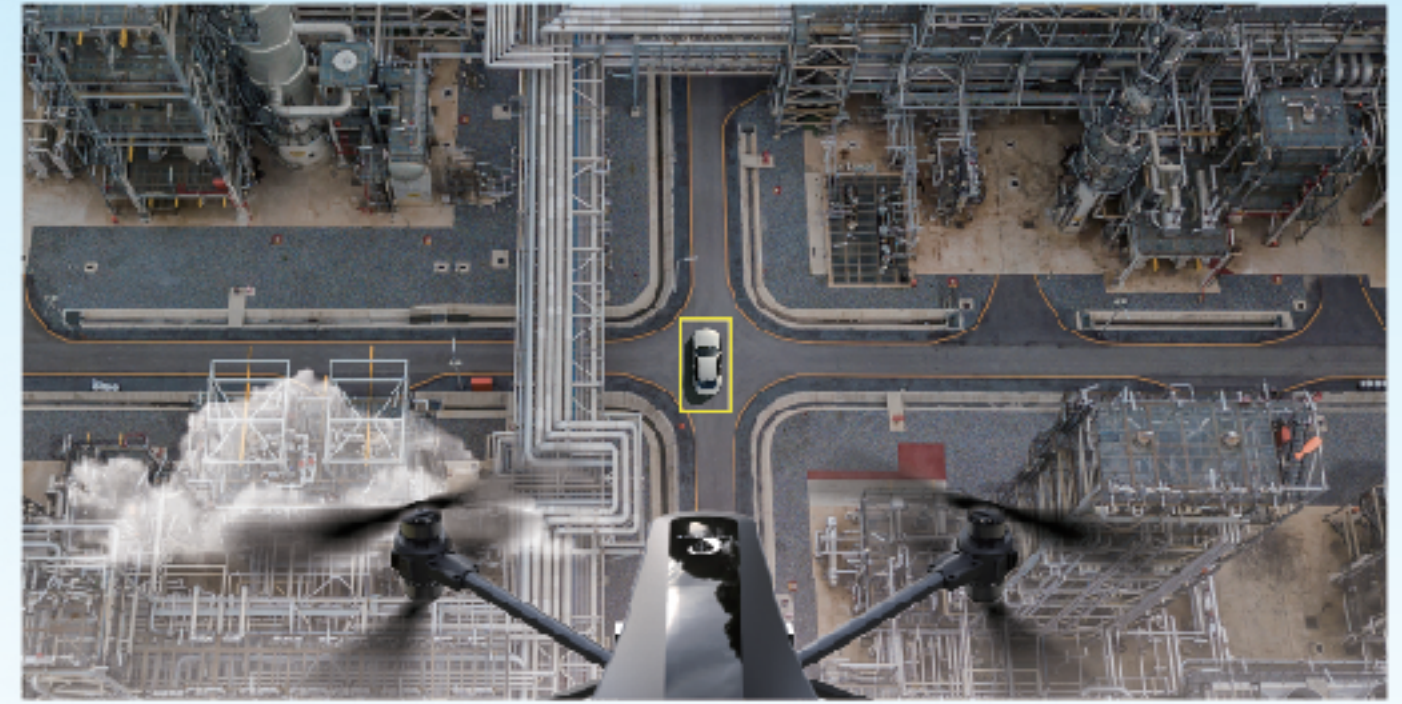AI Chip Embedded   Deep Learning   Edge Computing   Object Recognition   Auto Tracking

Feature of Smart Drone

The flight control technology developed by CIRC and can be defined as one which performs autonomous aerial missions in both daytime and night time, and could be controlled remotely beyond visual range, operator-free, safe and reliable. The smart drone is passing kinds of reliability tests (wind resistant, snow, rain, salt-mist environment, and extreme temperatures), our drone hardware platform working with our flight control software are proven to deploy missions in all weathers.

DESIGN FOR MISSION CORPORATION

Autonomous takeoff, patrol, landing and recharging, collision avoidance
Real-time video analysis, recognition, and tracking
Multi-camera module with Optical Zoom x10/Thermal Lenses
Propulsion system redundancy for safe RTL
Safe and robust design.
Weatherproof with IP54 protection and Beaufort scale- 6 wind resistance

Fleet Management System

Based on reliable cloud base structure, the fleet management system enables users to operate multiple drones through web-based UI, and mobile App. Also enables users to monitor live video streams (Visual & Thermal). The system could be integrated to the ground control station. In addition, the system automatically triggers and dispatches drones in urgent cases to help users to lower response time, maximize security efficiency.

- Real-time Mission Planning, Alarm and Control
- User/Group Access & Flight Data Management
- Fail-safe Setting
- Gimbal Control to provide FPV
- Industry-specific IVA Engine
- ONVIF Compliant APIs for integration with VMS/CMS

Applications and Scenarios

POWER PLANT & SOLAR FARMS

OIL / GAS

CRITICAL INFRASTRUCTURES

CHEMICAL STORAGE

CORPORATION & INDUSTRY AREA

DATA CENTER

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Drone Specification

Item	Description
Diagonal Wheelbase	756 mm
Weight	6 Kg
Smart Battery	6S LiPo, 22.8V, 16,000 mAh with BMS
Motor	High efficiency 3511 (400KV)
Propeller	High efficiency 16" CF
Hovering time	30 mins
Weather-proof	IP54
Multi-camera	Optical Zoom x10 and Thermal Camera
Max ascent / descent rate	5/3 mps
Max speed	18m/s
Wind tolerance	Beaufort scale – 6
Working temperature	-10˚C ~ 40˚C

Base Specification

Mechanical Spec.	
Painting	White, high reflective paint
Dimension	177 cm wide x 189 cm long x 80 cm tall
Weight	145 Kg
Electrical Spec.	
Power Supply Input	100V ~ 240V AC
Charge Current	15A
Smart charger	Control/read data via I2C; 1,000W with 5V, 12V, 24V, Flexible range between 24.6V 5A ~ 35.6V 16A
Operating Spec.	
Temperature	- 10˚C ~ + 40˚C
Weather-proof	IP44
Durability	100,000 cycles (open and close)

Design and specifications are subject to change without notice   2019 MAR