Pan & Tilt Rotation Platform with Vision System

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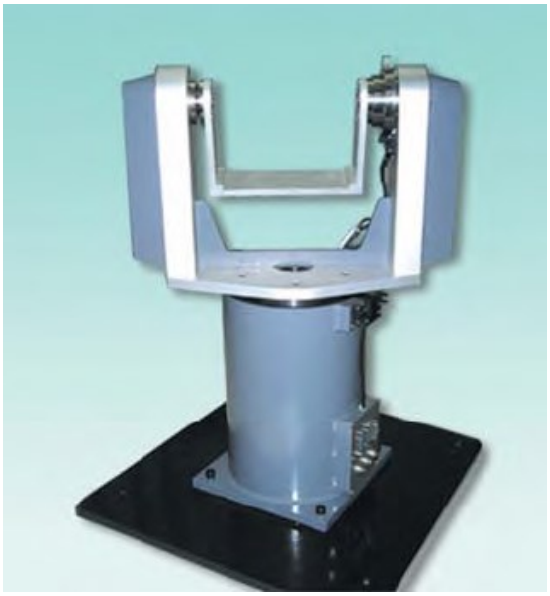
GOOGOL TECHNOLOGY

Pan &Tilt, with vision system, is a type of mechanical platform that can simultaneously rotate vertically and horizontally. As a core part of the mechatronic control system, it can be used as the fundamental motion platform for military and civil instruments and infrastructures such as radars, cannons, missile launchers, and different types of monitoring devices. It can also be used as simulation and experiment platform for high-tech weapons such as rockets, missiles, torpedoes and satellites.

GPT Series Pan & Tilt system designed and manufactured by Googol Technology is low cost, high performance, modularized open mechatronic system developed to satisfy the teaching and research purpose for military and general colleges.



Main Feature:

- Main body modularized design; PAN and TILT are independent module and can be assembled easily. It can be controlled independently or coordinately
- The product adopts AC servo motor and harmonic reducer, which not only guarantees the stable performance of the platform in low speed but also provides fast dynamic response
- Control system is composed of PC and DSP based motion controller. Ensure open control system and convenient extendibility
- The development environment of the software is based on Windows platform, which can fully utilize various visualized development tool; simplify experiments greatly and facilitate the process of research and development

Experiments and Research Works

Fundamental Experiment Content:

- The formation of Pan and Tilt motor system and basic operation of experiment system
- Application, maintenance and adjustment of AC servo motor
- Selection and application of Pan and Tilt controller.
- Programming of Pan and Tilt experiment
- Positioning adjustment of Pan and Tilt motion controller experiment
- Pan and Tilt fast response and trajectory tracking experiment

Innovative Research Content:

- Dynamic target tracking research experiment with CCD sensor
- Simulation of dynamic target locking and tracking research experiment with inclinometer and moving platform

Vision System Specification

Item	Specification
Image acquisition card	• Support NTSC, PAL, RS170 and CCIR standard video source • 2 video decoding framework for quick channel switch • Capable of connecting up to 16 CVBS channels, 8 Y/C channels or mixed import channels • 16 ways of TTL I auxiliary port and RS-485 Serial Port • Integrated “Watchdog timer” for surveillance system • Support 32 bit 33/66 MHz PCI Bus • Software development package, including Matrox Imaging Library (MIL)/ActiveMIL, MIL-Lite/ActiveMIL-Lite. • Support Microsoft Windows 2000 and Windows XP
CCD Industrial Camera	• High resolution • VBS and Y/C output • Digital Circuit function • One-click white balance • Digital signal processor (DSP) included • TV system: NTSC/PAL • Image sensor: Interline CCD • Effective pixels: 752 x 582 • Pixel size: 8.6 x 8.3 • Scan lines: 625 Lines • Resolution: 470TV lines (horizontal); 460TV lines (vertical) • Signal to Noise Ratio (SNR): 46dB • Power supply: DC12V ± 10% • Camera Interface: C • Size: 31 (W) x 29 (H) x 80 (D) mm

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Technical Specification

Item		Specification	Item		Specification
Vertical axis turning angle range of PAN platform		0~320°	Horizontal axis turning angle range of PAN platform		-90° ~ 90°
PAN platform load		20 kg	TILT platform load		5 kg
PAN platform weight		<50 kg	TILT platform weight		<15 kg
PAN platform size	Top diameter	490 mm	TILT platform size	Length	300 mm
	Base diame-ter	500 mm		Width	260 mm
	Height	672 mm		Height	300 mm
2 axes motion precision		800000 pulse/360°			
Harmonic reduction ratio		PAN Axis	80		
		TILT Axis	80		
Two-axis swing resolution		0.00045°	Maximum two-axis swing speed		37.5 rpm

Ordering Guide

Model Number	Product Name	Description
GPT-2001	Pan & Tilt System	• Pan & Tilt Main Body • GT-400-SV Motion Controller • Pan & Tilt Control Software with Source Code
GPT-2201	Pan & Tilt System with Vision System	• GPT-2001 package • Vision system • Pan & Tilt Vision Control Software with Source Code