

“CASPA”

The Combined Autopilot and Surveillance Payload Avionics



Key features

- ▶ **SELF CONTAINED - Easy Integration**
 Provides the following:
 - Command Receiver.
 - Telemetry Transmitter
 - 3 Axis, Solid State Attitude Sensor
 - Pressure Transducers for airspeed and altitude.
 - GPS Receiver
- ▶ **GPS WAYPOINT NAVIGATION - with altitude and airspeed hold**
- ▶ **AUTONOMOUS OPERATION - with automatic launch and recovery sequences**
- ▶ **MATURE SYSTEM - Proven in many thousands of hours of operational use in the world's harshest environments on land and at sea.**

Meggitt Defence Systems Ltd, is a world leader in the design, manufacture and operation of aerial targets, unmanned vehicle systems and associated equipment.

Developed for use in Meggitt's own range of air vehicles, the CASPA avionics system provides a proven, reliable, integrated avionics and autopilot solution to other unmanned vehicle producers.

CASPA is currently available in 2 versions, both of which provide a "plug and play" capability. The original CASPA which was developed for the Banshee and Voodoo air vehicles, provides users with a system that allows its performance to be "user tuned" to suit a vehicles particular flight characteristics and its mission and payload control requirements, whilst the smaller and lighter mini-CASPA provides a reduced complexity and lower cost making it ideal for use in semi-expendable target drone applications.

Capabilities of both types include airspeed hold, altitude hold, turn coordination, GPS navigation, plus autonomous operation from launch to recovery.

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SPECIFICATION

Communications

- Typical Operational range: 100km
- Carrier Frequency: 400MHz - 465MHz (Typical)
- Carrier Spacing: 25kHz
- Modulation: FSK
- Protocol: Proprietary
- Command Receiver Baud Rate: 2,400
- Command Receiver Sensitivity: <-110dBm
- Telemetry Transmitter Baud Rate: 2,400 or 9,600
- Telemetry Transmitter RF Power: 1W

GPS

- 12 channel simultaneous
- 1 sec update
- Battery Back-up

Gyro

- 3-Axis Rate Gyro sensor +/-300 deg/s
- 3-Axis Accelerometer sensor +/-5g per axis
- Drift compensation

Air Data

- Altitude 0-30,000ft (0-10,000m)
- Airspeed 0-350kts (180m/s)

Autopilot

Basic Autopilot Modes

- Autolaunch
- Autorecover
- Automatic Height, Turn and Throttle
- Automatic Height, Turn and Airspeed
- Automatic Height, Heading and Airspeed
- Sea Skimming Radar Altimeter mode

Auto Navigation Mode

- Fly to waypoint
- Height Hold Option
- Heading Hold Option

Back-up Autopilot Option

- Manual Input via portable hand control unit

Programmable flight control settings

- Elevator, Aileron and Rudder control options

Interfaces

- Up to 8 PWM 5V servo drive signals (1ms-2ms, 50Hz update)
- Up to 9 Open Drain switch outputs for parachute solenoid, payload enable etc.
- I2C interface for payload controls i.e smoke/flare systems
- Payload monitor inputs (analogue and digital)
- Direct Data interface for local test/control and software update

Features

Active hardware:

- Tone-Cut-Down circuit

Optional hardware:

- Independant Flight Termination Circuit to satisfy UK MOD airworthiness requirements

Automatic Software:

- Flight Termination System
- Engine RPM counter

..- Ignition kill relay

- Battery Under-Voltage detection

..- In-field software update

..- Marine Option available

Power Supply

Typical Operation

- Avionics Supply 12V <600mA
- Servo Supply optional 4V8 to 12V (current, dependant on servo selection)

Mechanical

Standard CASPA Connections

- Command Receiver - BNC or SMA
- Telemetry Transmitter - TNC or SMA
- GPS - TNC or SMA
- Main Harness - 37-Way D-type
- Auxilliary Harness - 15-Way D-Type
- Air Data - 2xPort

Mini CASPA Connections

- Command Receiver - SMA or BNC
- Telemetry Transmitter - SMA or TNC
- GPS - SMA or TNC
- Main Harness - 25-Way D-type
- Air Data - 2xPort
- Test Port - 5-Way Lemo

Environmental

- Operating Temperature -20degC to +55degC

This data may be changed without notice and is not binding.

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