TechJect

Unleash The Tech

TECHJECT—Electronics (ElecJect)

Micro Architecture and Control

(MARC—2) Autopilot and Prototyping System

» Light
» Small
» Modular
» Fast Computation
» Low Power
» Significant Memory

SPECIFICATIONS:

Processor:	Cyclone III FPGA (NiosII Softcore); Dual Core Capable
Logic Cells:	55K Cells
Operating Speed:	125Mhz Core; 1.3Ghz on-chip peripherals
Memory:	512KB (On-Chip, Dual Access RAM);
Flash:	16MB (High Speed Serial Flash)
Transceiver:	2Mbps capable
Motor Drivers:	1A / Channel Mosfet Driver (Total 4 ch)
Inertial Sensors:	3 axis Accelerometer; 3 Axis Gyroscope
ADC:	12bit, 1.5Msps, 8 channel
Peripherals:	10pin compact JTAG programmer
Prototyping:	60 pin prototyping area; LEDs, Switches.
Power Ports on-board:	1.2V, 2.5V, 3.0V, 3.3V, Battery Out
Dimensions:	0.6" x 3.0"; Weight: 6.3 grams
Battery:	1s Lithium Polymer: 2.5-4.2V

APPLICATIONS:

Autopilot Modules for:
- Helicopters, Quad-Copters, Dragonfly MAV, Fixed-wing Airplanes
  - Micro Aerial Vehicles
  - Unmanned Aerial Vehicles
  - Remotely Piloted Vehicles (Drones)
- Small Ground Robots
- Small Underwater Vehicles
- Research & Development
  - Computer Vision; Navigation; Multi-Robot Control

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(MARC—3) Advanced, Ultra-Micro Avionics
(Stereoscopic Vision Based Sensing and Control)
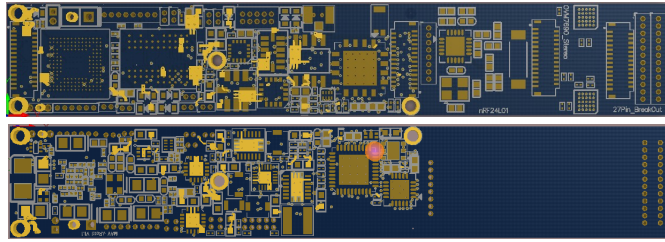
SPECIFICATIONS:

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Processor:	Cyclone III FPGA (Nios II Softcore); Dual Core Capable
Logic Cells:	15K Cells
Operating Speed:	125Mhz Core; 1.3Ghz On-Chip Peripherals
Memory:	512KB (On-Chip Dual Access RAM);
Flash:	8MB (External, High Speed Serial Flash)
Transceiver:	2Mbps capable
Motor Drivers:	1A / Channel Mosfet Drivers (Total 4 channels)
Sensors:	3 axis Accelerometers, 3 Axis Gyroscopes, 3 Axis Magnetometers; ambient light sensor; ambient humidity sensor; differential / absolute pressure sensor
GPS:	20Hz Update; 16 Satellite Lock
Cameras:	Dual 640x480 (VGA) cameras; 3M/5M pixels (on-request)
ADC:	12bit, 1.5Msps, 8 channel
Peripherals:	10pin compact JTAG; LEDs, Jumpers, 27Pin Flex Connectors (x2), EMIF connection to external processors/memory modules;
RC Control:	4-Ch 2.4Ghz Receiver
Dimensions:	0.6" x 2.2"; Weight: 5 grams
Power-Supply:	2.5V - 5.5V (1S Lithium Polymer Capable)

APPLICATIONS:

High Performance, Ultra-Small Avionics package for Micro and Large Aerial Vehicles, Ground Robots and more. Full-Featured and customizable.
Higly modular; Hardware acceleration capable.

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Micro Architecture and Control
(MARC—BASIC) Flight Control System
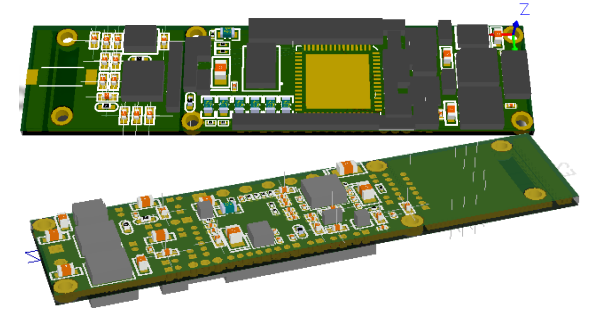
SPECIFICATIONS:

Processor:	dsPIC33F (Microchip)
Operating Speed:	80Mhz Core; 80MIPS
Memory:	53KB (On-Chip RAM);
Flash:	512KB (On-Chip, High Speed Flash)
Transceiver:	2Mbps capable
Motor Drivers:	1A / Channel Mosfet Drivers (Total 4 channels)
Inertial Sensors:	3 axis Accelerometer; 3 Axis Gyroscope
ADC:	12bit, 1Msps, 16 channel
Peripherals:	6pin compact ICD programmer; LEDs, Jumpers
RC Control:	4-Ch 2.4Ghz Receiver; 7-Ch 2.4Ghz Receiver
Dimensions:	0.5" x 2.1"; Weight: 3.5 grams
Power-Supply:	2.5V - 5.5V (1S Lithium Polymer Capable)

APPLICATIONS:

» Light
» Small
» Modular
» Fast Computation
» Low Power
» On-Chip Memory

Control Module for:
- Helicopters, Quad-Copters, TechJect MAV,
- Fixed-wing Airplanes
  - Micro Aerial Vehicles
  - Unmanned Aerial Vehicles
  - Remotely Piloted Vehicles (Drones)
- Small Ground Robots
- Small Underwater Vehicles
- Research & Development; Multi-Robot System

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