ROBOTIC HARDWARE

systems

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Drone Controller:

A look at How It Works, Important Terminology, and Why it is unique in the RC Aircraft World
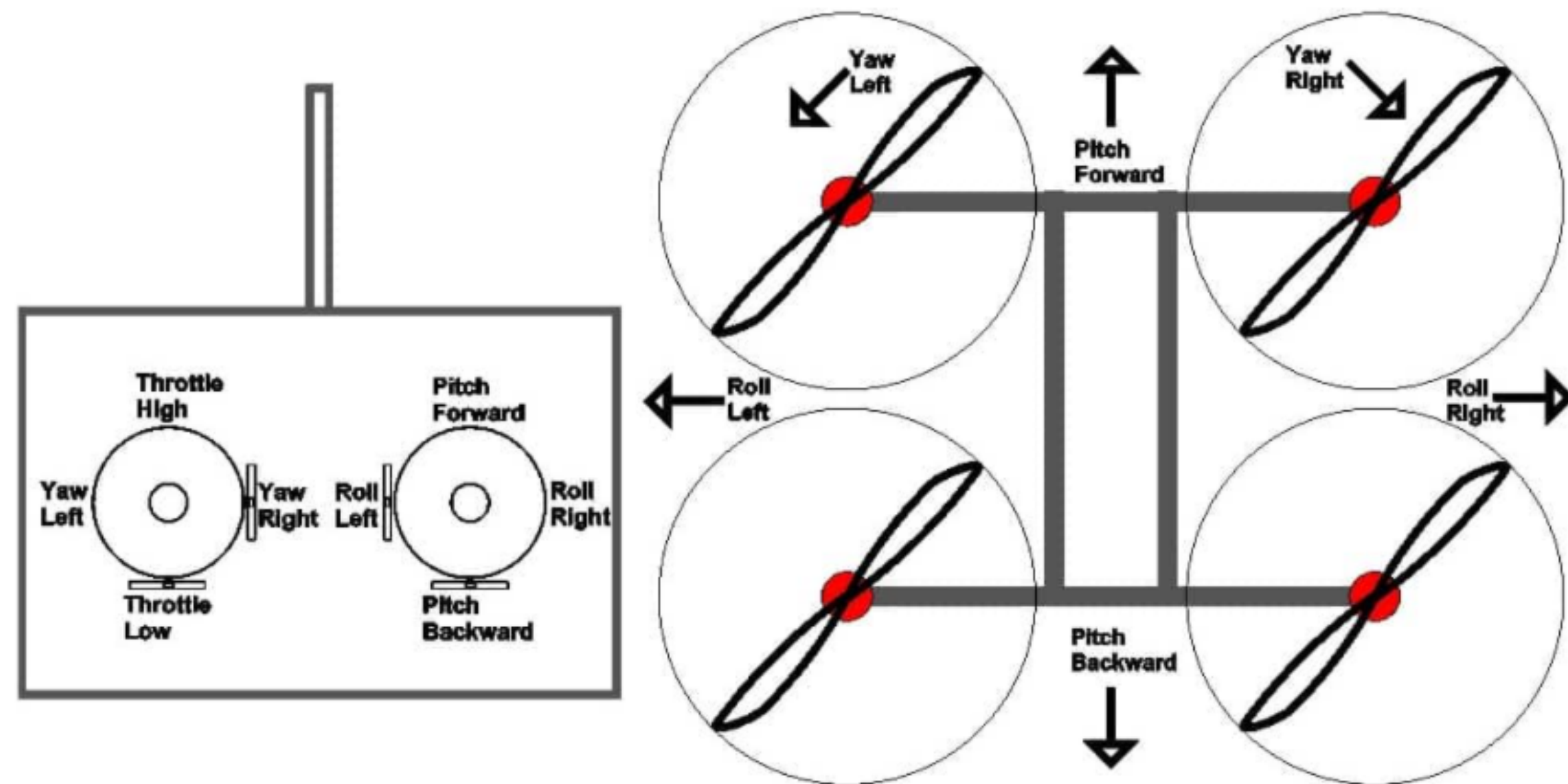
HOW DOES A DRONE CONTROLLER WORK?

A drone controller works by sending a radio signal from the remote control to the drone, which tells the drone what to do.
Radio signals are sent from the radio transmitter in the drone controller and received by the drone's receiver. This is why the drone controller is sometimes simply called the drone radio transmitter or the drone radio controller.

DRONE REMOTE CONTROLLER TERMINOLOGY

- **Roll.** Moves your drone left or right in the air, literally "rolling" your drone.
- **Pitch.** Tilts your drone forward or backward.
- **Yaw**. Rotates your drone clockwise or counterclockwise, allowing you to make circles or patterns in the air
- **Throttle**. Controls the amount of power sent to your drone, which makes the drone go faster or slower.

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WFT06X-A Transmitter Features (Front)

Power Light

Antenna

Handle

Landing Gear/Gyro Switch

Flaperon /Screw-pitch

WFLY

Neckstrap Attachment

Power Trim

Elevator/Rudder
Control Rod

Aileron/Throttle
Control Rod

Elevator Trim

Rudder Trim
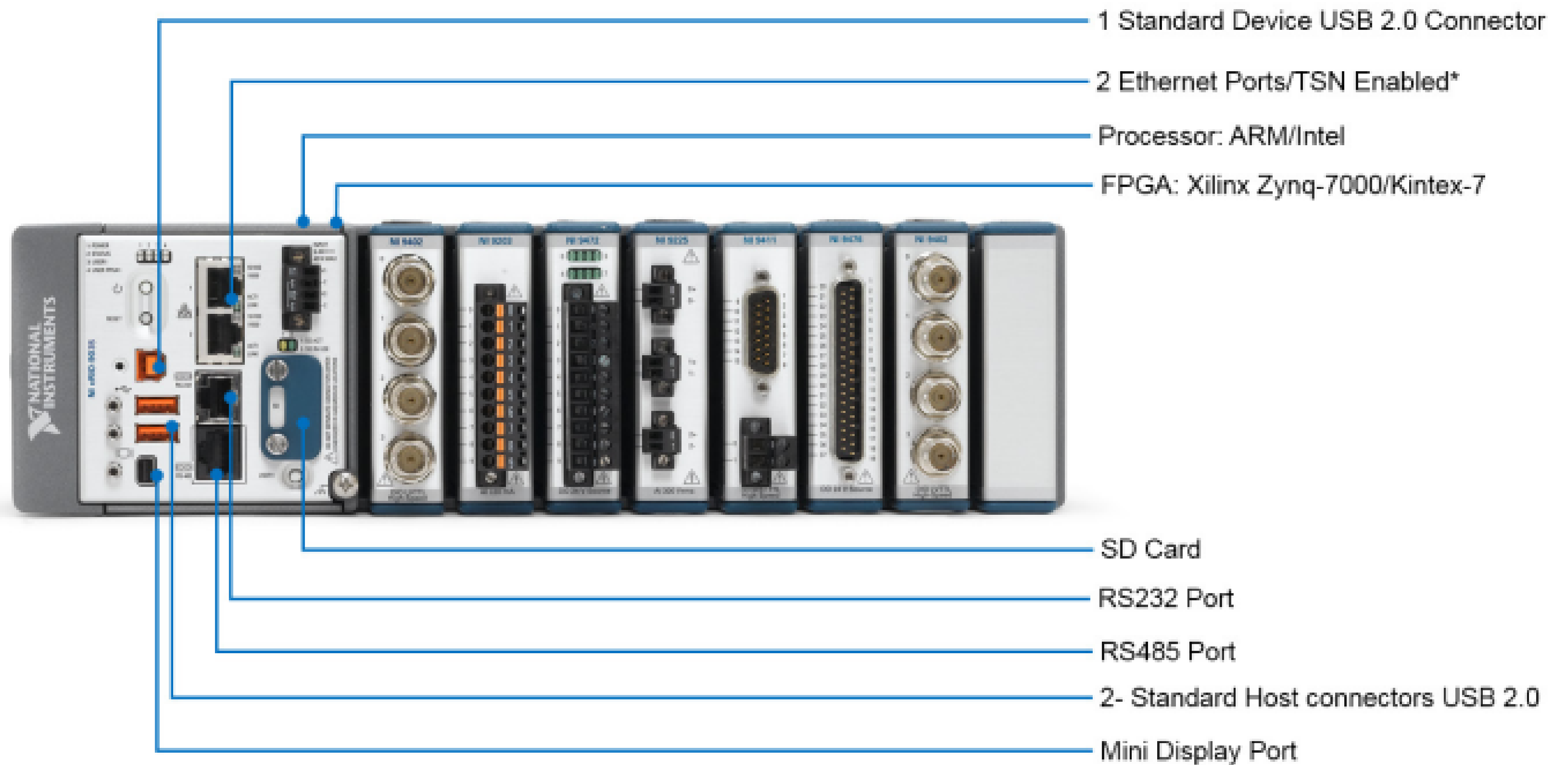
WFT06X-A

Aileron Trim
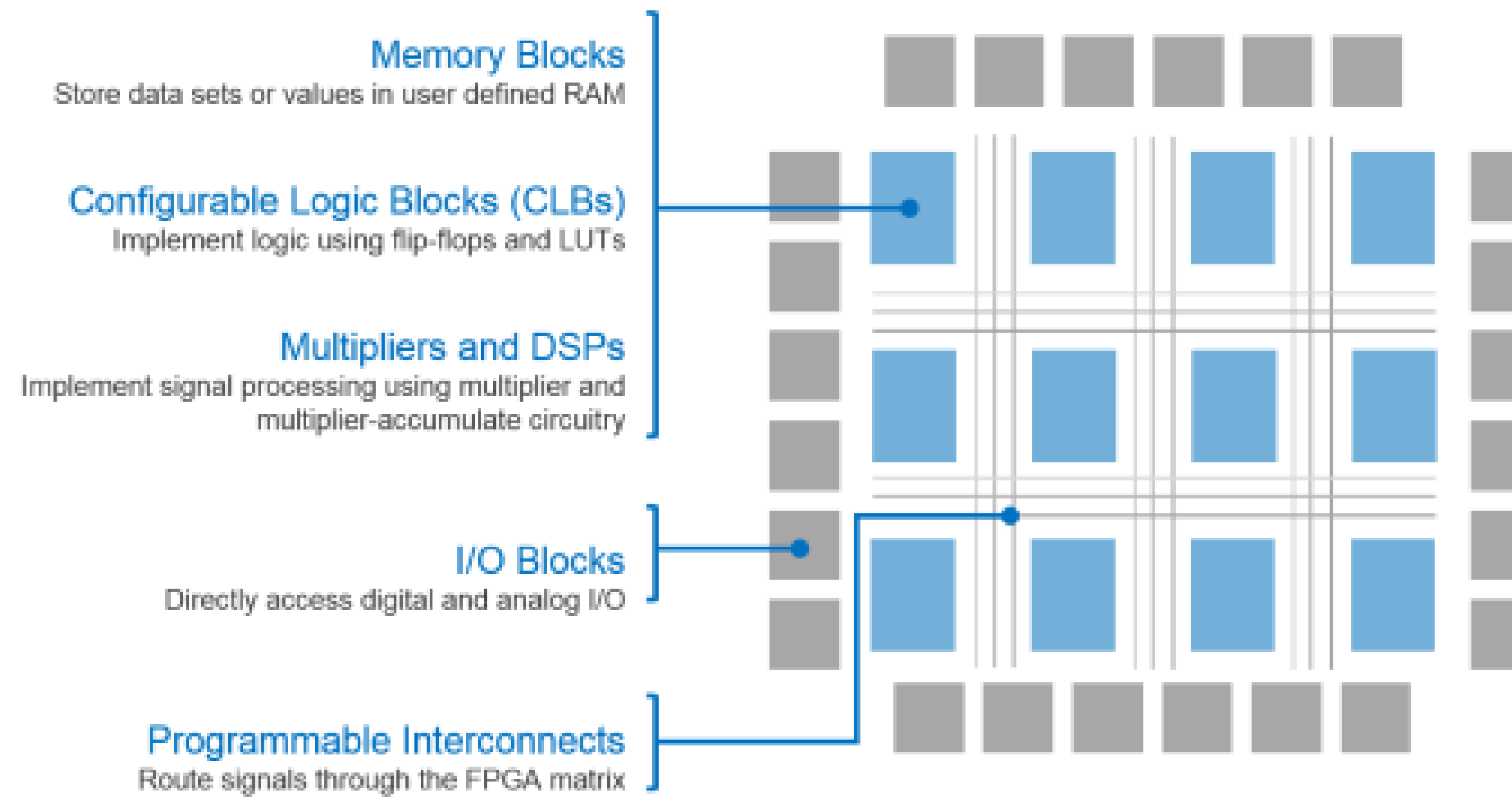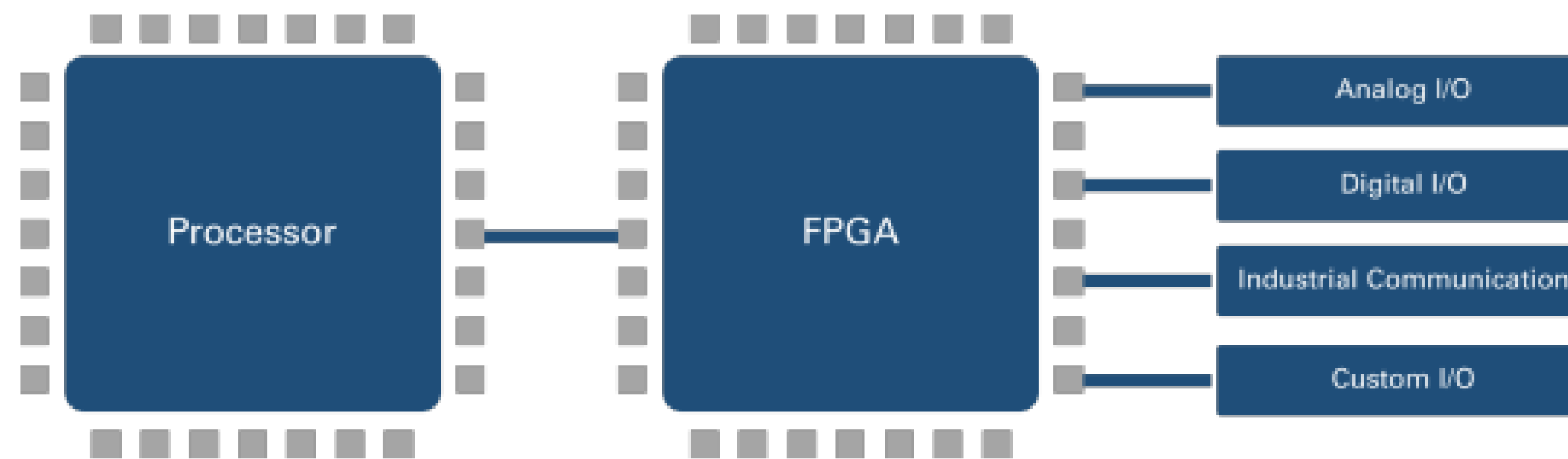Power Switch

COMPACTRIO CONTROLLERS

CompactRIO Controllers are modular, high-performance embedded controllers for rapid development and deployment into industrial control and monitoring applications. They feature extreme ruggedness, industry-standard certifications, modular I/O, and integrated motion, vision, industrial communication, and HMI capabilities. C Series modules deliver high-accuracy I/O with measurement-specific signal conditioning so you can connect to any sensor or device on any bus

1 Standard Device USB 2.0 Connector

2 Ethernet Ports/TSN Enabled*

Processor: ARM/Intel

FPGA: Xilinx Zynq-7000/Kintex-7

SD Card

RS232 Port

RS485 Port

2- Standard Host connectors USB 2.0

Mini Display Port

*Only on cRIO-9035/9039 models

Processor — **FPGA**

- Analog I/O
- Digital I/O
- Industrial Communication
- Custom I/O

Memory Blocks
Store data sets or values in user defined RAM

Configurable Logic Blocks (CLBs)
Implement logic using flip-flops and LUTs

Multipliers and DSPs
Implement signal processing using multiplier and multiplier-accumulate circuitry

I/O Blocks
Directly access digital and analog I/O

Programmable Interconnects
Route signals through the FPGA matrix

Nuvis-7306RT Series

Nuvis-7306RT series is an all-in-one powerful vision controller incorporating every function needed for machine vision applications. Powered by Intel® 9th/ 8th-Gen Core™ i7/i5, Nuvis-7306RT brings tremendous computing power for image processing. Nuvis-7306RT integrates constant-current lighting controller, isolated 12V camera trigger output, encoder input for position information and DIO to connect sensors/ actuators. Thanks to Neousys' patented MCU-based architecture and DTIO/ NuMCU firmware, Nuvis-7306RT is able to overcome latencies between sensor input and trigger output. It offers microsecond-scale real-time I/O control that guarantees in-time or in-position image capture. For deep learning vision applications, Nuvis-7306RT can accommodate an NVIDIA® 120W TDP GPU to leverage state-of-the-art object detection/ classification neural network models. Built-in vision-oriented I/O along with remarkable performance makes Nuvis-7306RT the most exceptional vision controller that fits right into the modern vision industry

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