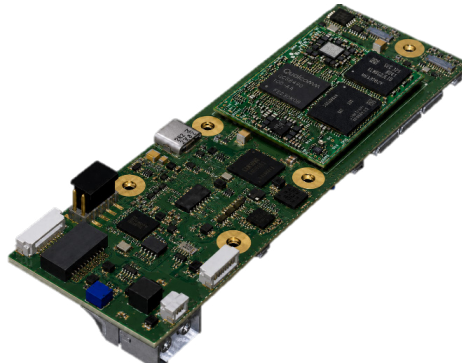


Spotter

Autonomy, Swarming and Real-Time Decision Making

Powered by
Qualcomm®
Dragonwing™ QCS6490
System-on-Chip



Production-Aligned Edge AI and Flight Integration for Next-Gen UxV's

Spotter is a compact, production-aligned robotics reference platform designed to accelerate the development of AI-enabled and autonomous systems across aerial, ground and maritime applications. Powered by Qualcomm® Dragonwing™ QCS6490 chipset, Spotter combines high-performance vision processing, sensor integration, vehicle-control interfaces and high-speed connectivity in a compact 40 × 120 mm form factor.

Built for real-world autonomous platforms, Spotter integrates the key interfaces required for cameras, telemetry, navigation sensors, control systems and external payloads. Dual MIPI CSI, analog video, Ethernet, USB and flexible GPIO, SPI, I²C and UART interfaces provide a versatile foundation for perception, navigation, inspection, surveillance and other edge-AI workloads.

Unlike general-purpose embedded development kits, Spotter is engineered around the requirements of mobile robotic and drone systems. Its integrated hardware and software architecture helps OEMs reduce system-integration effort, accelerate proof-of-concept development and move more efficiently toward a production-ready autonomous platform.

Key Features

- Qualcomm® Dragonwing™ QCS6490 SoC
- Up to 8GB LPDDR5 RAM + 64GB eMMC
- Up to 12.5 TOPS of AI performance
- Dual MIPI CSI camera interfaces with C-PHY / D-PHY support
- Analog / CVBS video input and output
- Qualcomm Linux for long term deployment
- Optional STM32H7-class flight / vehicle controller
- Dual IMU, compass and barometer sensor integration
- Multiple high speed connectivity options

Applications

- AI-enabled UxV platforms
- FPV drone platform modernization
- Short-range reconnaissance-class systems
- Autonomous and assisted navigation
- Vision-based detection and tracking
- RGB and thermal imaging payloads
- Multi-drone coordination and teaming
- Attributable autonomous systems
- Ground robots and unmanned ground vehicles
- Maritime surface and subsea autonomy

UxS Engineering Services:

We provide a full solution for UxS systems – our unparalleled engineering expertise and product development skills deliver innovative UxS products that are cost-effective and can jumpstart your Go-to-Market timeline.

Our business model includes turnkey product development services, or we can augment your team in specific areas of development. The choice is yours.

Specialized UxS Capabilities:

- Camera sensor integration and multi-camera systems
- Advanced image tuning for low light, high contrast, and aerial conditions
- Machine learning for autonomous navigation and object detection
- Image and video stabilization for in-flight capture
- Complex camera use-cases: multiple concurrent cameras, gimbal integration, in-camera features, sensor synchronization
- Optimized mechanical, RF, thermal, and power design for extended flight performance



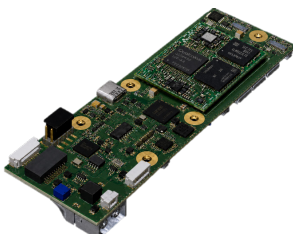
Hardware Specifications:

• Processors		Qualcomm® Dragonwing™ QCS6490 SoC built on 6nm technology: Kryo™ 670 Octa-core CPU: 1 Prime @ 2.7 GHz + 3 Gold @ 2.4 GHz + 4 Silver @ 1.8 GHz Hexagon™ 770 with Hexagon Vector eXtensions (HVX)	
		Adreno™ 643L GPU @ Fmax Spectra™ Spectra™ 570L ISP Adreno™ 633 video processing unit	Adreno™ 1075 display processing unit 6th Gen Qualcomm AI Engine Secure processing unit
		MCU: Optional STM32H7: Arm® Cortex®-M7 core up to 480 MHz with DSP and double-precision FPU; 2 MB Flash + 1 MB RAM; advanced timers, PWM, ADC and high speed peripheral interfaces for real-time vehicle and flight control.	
• Memory/Storage		Up to 8GB LPDDR5 and 64GB eMMC configuration (other configurations available upon request)	
• Display Interfaces		Support for USB3.1 Type-C with DisplayPort v1.4 and USB 2.0 Analog Video Output	
• Camera Interfaces	Digital	2x 4-lane MIPI CSI D-PHY 1.2 Spectra 570L ISP supporting 36 MP + 22 MP at 30 fps or three 22 MP at 30fps ZSL.	
	Analog	CVBS / analog camera input	
• Video Performance	Decode	Video decode up to 4K60. Native decode for H.265/H.265/VP9	
	Encode	Video encode up to 4K30. Native encode for H.265/H.265; Support for HDR10 and HDR10+ playback	
	Dec & Enc	Concurrent 1080p60 Decode and 1080p60 Encode or 4K30 Decode and 4K30 Encode	
• Integrated Sensors		Dual 6-Axis IMUs — 2.8 mdps/√Hz gyro noise, 70 µg/√Hz accel noise Precision Barometer — ±0.03 hPa relative accuracy, ~±25 cm altitude 3-Axis Magnetometer — 0.3 µT/LSB resolution, up to 200 Hz output	
• High Speed Connectivity		1x GBE Port 1x USB 3.1 with support for Type-C + DisplayPort v1.4 with USB SS data concurrency Addon Connectivity via USB-C for WiFi Debugging 1x PCIe Gen3 2-lane; 1x PCIe Gen3 1-lane for connectivity	
• I/O Interfaces		8x PWM, MAVLink, UART, I2C, I3C, SPI, configurable GPIOs, sensor I/O to dedicated Hexagon™ sensor DSP	
• RC Interface		Dedicated configurable ELRS interface	
• Power Consumption		<7 Watts (typical)	
• Operating Environment		Input voltage: 4.2V nominal Operating Temperature: -20°C to +85°C	
• Form Factor		40x120mm with 30x30 Mounting Holes	

Software:

• OS Support	Qualcomm Linux; Betaflight / PX4 /Mavlink Support
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* QCS6490 Chipset Performance, see SOM/SIP Release Notes for details
on tested configurations and platforms.



Purchasing Information:

SKU	Description
SPTR-4WN-DL-1G	8GB LPDDR5 / 64GB eMMC w/ MCU

Alternate SOM and Board configurations available by special order (minimum order quantities apply)
- e.g. different memory size, etc. Contact sales to discuss your specific needs today.

Certifications



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Learn more at lantronix.com/spotter