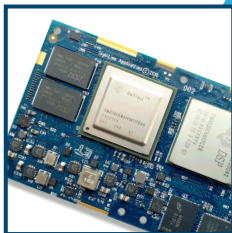
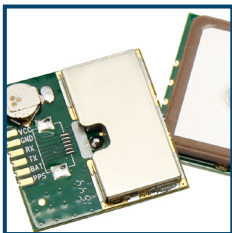
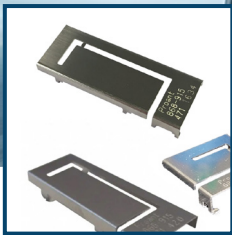


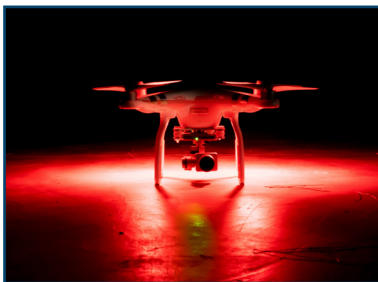


Unmanned Aerial Vehicles (UAV)

Components and technical solutions



consult. design. integrate.



Finding the right technology for a UAV application in a complex market

Unmanned Aerial Vehicles or UAVs, refer to pilotless aircraft and drones either remotely controlled by an operator, or autonomously by an onboard computer.

With the UAV market anticipated to grow up to 10% CAGR by 2024 in applications for civil and commercial purposes, such as remote sensing, oil, gas and mineral exploration and crop monitoring, they are still expected to dominate within military applications. With defence industry still investing more into expanding their capabilities across gathering intelligence, surveillance and target recognition as they serve as a lower-cost alternative to manned aircraft.

The requirements of these types of applications mean that the technologies within them need to be increasingly smarter, bringing more of a complex challenge in choosing the right components for such demanding applications.

Acal BFi offers a unique portfolio of market-leading products and solutions, ideal for the specific needs of UAV applications such as components that offer low power consumption, are lightweight with small form factors, yet still giving the high-quality, powerful accuracy and reliability required.

Specialist components for UAV

This brochure features recommended market-leading technologies and solutions offered through Acal BFi and our specialist partners that are ideal for demanding UAV's applications offering compact, robust and high-performance solutions.

As a complete solutions provider, we work with you to help identify the best solution for your requirements, using our partnerships with market-leading suppliers and access to the latest technologies. We also have in-house competence centres where we have the capabilities to assist with manufacture, prototyping and custom solutions, should your application be complex or challenging. Supported throughout by our dedicated experts at every stage from design to production to meet your timescales and requirements.

UAVs are generally split across three types:

- Small UAV (group 1 UAVs) which have a maximum gross take-off weight (MGTW) of 0 - 20 kg.
- Medium UAV comes (group 2 UAVs) which have an MGTW of about 21 - 55 kg.
- UAVs classified under groups 3,4, and 5 are known as large UAVs. These UAV have an MGTW of more than 55 kg.



Infrared imaging

- Longwave(LWIR) cameras
- Medium (MWIR) cameras
- Short wave (SWIR) cameras

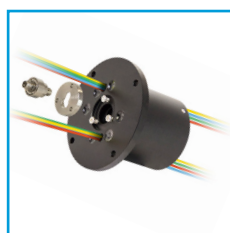
Pages 4 - 5



Visible imaging / video analytics

- Block and high-definition visible (VIS) cameras
- Video analytics and interface boards

Page 6



Power supplies / Signal transmission

- Power supplies
- Slip rings

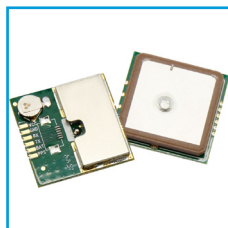
Page 7



Sensing / Positioning

- Accelerometer and Gyroscope Sensors
- LIDAR, laser altimeter and anti-collision

Pages 8 - 9



Connectivity solutions

- Cellular for low power UAV applications
- LoRaWan
- Front End Modules (FEMs)
- Bluetooth and wireless modules
- GPS and GNSS modules
- Antennas

Pages 10 - 14

Longwave infrared (LWIR) camera cores

We offer a range of industry-leading, high-performance LWIR cameras (7-12 microns) provide incredibly accurate images for UAV operators, because of the minimal atmospheric absorption gained from long-wave infrared imagery and the advanced image processing software available.

These specialist products are small-sized, have enhanced sensitivity and are simple to integrate, so they are ideal for UAV applications such as surveillance, agriculture and electrical-building inspection or indoor applications such as monitoring pipes, subways and sewers.

Our IR specialists offer personalised and responsive support to customers at every stage of a project providing samples and technical support. We also offer an exclusive range of specialist lenses which can be integrated and configured by our custom services centre in Germany.



Teledyne FLIR-BOSON®+



- Resolution: 640x512 pixels
- Pixel pitch: 17/12µm
- Industry-leading Sensitivity: NETD < 20mK
- Spectral range: 7.5 – 13.5µm
- Temperature measurement option
- Size (LxWxH): Varies by configuration, as small as 21 x 21 x 11 mm
- Weight: Varies by configuration, as light as 7.5g
- Compatible with: Sightline video processing boards

Teledyne FLIR - HADRON™ 640R Dual Thermal & Visible OEM core



- Thermal Channel: 640x512 pixels 32° HFOV
- Visible Channel: 9248 x 6944 67° HFOV
- Temperature Accuracy: +/- 5°C or less
- IMU: ICM20602
- AI at the Edge: NVIDIA Jetson Nano or Qualcomm RB5
- Sealed (IP54) and Low SWaP (35x49x45mm, 56g, 1.8W)

FLIR BOSON®+ CZ 14-75



- Resolution: 640 x 512 pixels, pixel pitch: 12 µm
- Industry-leading Sensitivity: NETD < 20mK
- 15-75 mm f/1.2 high aperture 5x zoom lens (29.9° - 5.8° HFOV)
- Low SWaP (101 x 77 x 77 mm, 390 g, 12V)
- Compatible with: Sightline video processing boards

Infrared imaging

Midwave infrared (MWIR) camera cores

Our range of mid-wavelength cameras (3-5 microns) are chosen to deliver reliable, accurate thermal imagery over a wide operating temperature. These rugged, compact and configurable units are ideal for long-distance, complex security and surveillance.

We can help you tailor your controls and settings for each unique application. Including helping you to synchronise and trigger the camera from external events and devices. Demo/samples products are available to trial and test when you are designing a new UAV or if you want to change camera.



Teledyne FLIR – Neutrino SX8 – ISR 15-300

- Resolution: 1 280 x 1 024 pixels
- Pixel pitch: 8 μm
- Cooler MTTF: Up to 27,000 Hours
- 3.4 - 5 μm 15-300mm F/4.0 20x Continuous Zoom
- HFOV 39.1° to 2.0°
- Size (LxWxH): 20.3 x 9.6 x 9.6 cm
- Weight: 1.5 kg
- Power: 12.5VDC @ 0.7A nominal, 1.1A @ cooldown

Teledyne FLIR – Neutrino LC - ISR 20-420

- Resolution: 640x512 pixels
- Pixel pitch: 15 μm
- Cooler MTTF: Up to 27,000 Hours
- 20-420mm F/5.5 21x Continuous Zoom
- Size (L x W x H): 20.3 x 8.9 x 8.9 cm
- Weight: 1.2 kg
- Power: 12.5VDC @ 0.7A nominal, 1.1A @ cooldown

Short wave infrared (SWIR) cameras

All our specialist short-wavelength infrared cameras (0.9-1.7 microns) deliver high-resolution images. These cameras offer similar shadow contrast and detail to the visible light spectrum, but with the additional detail and visibility provided by thermal imaging. Providing you with high-quality images and clear visibility without being affected by environmental factors.

This range of cameras is ideal for active imaging and applications requiring precise details, for example, identifying unique people through fog or smoke. We work with market-leading suppliers to offer custom lens mounts, casing options to integrate the latest advanced SWIR cameras seamlessly into your design.



NIT – SenS 1280- High Sensitivity SXGA SWIR camera

- SXGA resolution – 1280x1024pixel @10 μm pixel pitch
- Linear response mode: High sensitivity
- Read-out noise 30e-
- USB 3.0 & CameraLink & SDI interface
- TEC1
- Available in Compact & Smart
- GenICam compliant (Smart)

Block and high-definition visible (VIS) cameras

We offer a range of unique VIS camera modules specifically designed to provide the compactness, low weight, vibration limitation and high optical performance essential for UAVs. We offer cameras with optical vibration compensation, assuring high-quality image stabilisation when images are captured in a vibrating environment.

To help you find the right VIS camera for your application, we provide personalised support including advice with product selection, offering block and high definition camera available to try and test and providing technical support with technology integration.



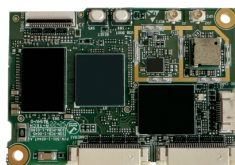
VIDEOLOGY – 55x Autofocus Zoom Block Camera

- Resolution: 5.14 MP, full HD, Sony IMX335 STARVIS sensor
- Optical zoom: 10x 55x, Digital zoom: 32x
- High Sensitivity, colour 0.02 Lux @ 1/30sec.
- Size (LxWxH): 101 x 54 x 64 mm
- Weight: < 77 g 355 g
- Power: 9 to 15 VDC, 540mA consumption: 3 W
- Compatible with: Sightline video processing boards

Video processing and interface boards

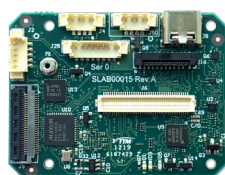
To gain increasingly accurate images from smaller and lighter cameras, the processing and analytics capabilities are very important to optimise processing video images, such as detection and tracking and stabilising and then encoding the images coming from your UAV.

Our local engineers are available to help tailor your specification and product, helping you to get fast technical support, no matter the size of your production run when you are integrating a board into your design.



IONODES Atomas-IoT-Micro

- Two 4-Lane MIPI CSI video 4K30 inputs
- Simultaneous encoding / streaming of two cameras
- HEVC / H.264 / MJPEG video compression
- 360° real-time video (on-board Dewrapping & Stitching of 2 MIPI cameras 180° (panamorph lens)
- Local recording to microSD card
- Onvif Profiles G,S,T
- Powered by QUALCOMM Octa-core SoC
- Optional IoT features: Wi-Fi, Bluetooth, GPS



SIGHTLINE - 4000

- Low SWaP
- Size: 50 x 38 mm
- Weight: 26.5 g
- Frame size and video-rate out:
1080p @30 fps with full SW
4K @30 fps with video encoding
- Dual Video-Channels w/ real-time on-board Processing (detection, tracking, stabilising, etc.)
- Compatible with: FLIR, VIDEOLOGY, TAMRON, SONY and Analog/HDMI/HD-SDI/CameraLink

Power supplies

Highly efficient power is critical to reducing the weight costs for power in a UAV. Small, more efficient power supplies enable designers to increase the UAV payload. Our portfolio of highly efficient AC/DC and DC/DC converters includes some of the industry's most respected and innovative power supply manufacturers.

The standard range starts at 1W DC/DC converters, includes open-frame components and goes up to 100kW AC/DC for customised power-supply units. Our in-house design and customisation capabilities and network of expert partners enable us to help you find, optimise or design the right power supply for your UAV's application.



RSG

R-Series

- DC/DC converter
- Output power: 0.25 to 24W
- Operating temperature: -40 ~ +125°C
- I/O Isolation: 1000 ~ 6000VDC



SynQor

milcots – hi-rel

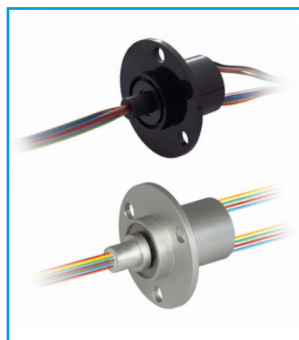
- DC/DC converter
- Output power: 1.5 to 28W
- Continuous short circuit and overload protection with auto-restart feature
- Continuous and transient options available

Slip rings

Slip Rings can be used in any system requiring the transmission of electrical or power signals to an intermittently or continuous rotating shaft. They are suitable for transmission of signals, video signals, field buses and current.

Thanks to the small ring diameter, these Slip Rings offer low peripheral speed between brushes and rings as well as reduced dynamic imbalance which means low wear and long life.

Designed to deliver a flexible, cost effective, reliable and high-quality solution, these Slip Rings are available in many standard configurations and with numerous circuits. Their compact size allows installation into small systems requiring high performances.



Heason / Servotecnica SVTS A Series

- Support current up to a 20A
- 3 to 56 circuits
- Bearings: Miniature, precision steel ball
- Contact: Gold to gold alloy
- Temperature: -20 to +80 °C
- Protection: IP 51
- Operational Life: 10,000,000 revolutions



Heason / Servotecnica SVTS C Series

- Thru holes with 3 to 500 mm diameter
- Up to 96 circuits (more on demand)
- Bearings: Steel
- Housing: ABS (hard plastic)
- Temperature: -40 to +80 °C
- Protection: IP 51 (IP65option)
- Operational Life: 100,000,000 revolutions

Accelerometer and Gyroscope Sensors

Unmanned Air Vehicle applications have demanding sensor requirements in terms of performance, size and cost. Dependent on the UAV's desired performance, there are a wide range of different sizes and dynamic behaviour, which places various levels of requirement on the inertial sensors used.

We provide, advanced tactical grade inertial accelerometers and gyroscopes best suited for demanding UAV applications. These specialist sensors accurately detect any change in direction, orientation and speed, having been designed to give the most accurate measurement for guidance and navigation control, altitude and heading references with unbeatable performance, reliability and stability.

We have the capabilities to design, build and assemble single or multiple sensor assemblies which achieve the most rigorous criteria for accuracy, repeatability and long-term reliability. With access to R&D teams behind the world's most advanced sensing technologies, developing and building custom sensor assemblies that are particularly useful in harsh or high-end applications is quick and easy, helping you to develop groundbreaking designs which incorporate the most advanced sensing technologies.



Safran Colibrys MS1000 Tactical grade MEMs Accelerometer



- Long Term Bias Repeatability: 1.2 mg (+/10g, typ)
- Residual Bias Modeling error: 0.7 mg (+/10g, typ)
- Non Linearity (IEEE Norm, % of full scale) : 0.3 %

Tronics Gypro 4300 High-performance MEMs Gyro



- Z-axis angular rate sensor
- 0.4°/h bias instability
- 0.07°/sqrt (hour) ARW
- Built-in temperature compensation (-40°C to +85°C)

Silicon Sensing CRM (PinPoint) Smallest, low cost MEMs gyro



- 12°/hr bias instability
- 40°C to +105°C Operating Temperature
- +/- 75°/sec to +/-900°/sec digital dynamic range
- +/-0.14°/s bias repeatability

Low SWaP Laser Rangefinder Modules

Our compact and lightweight laser rangefinder modules are designed for UAVs. These specialist modules can measure distances up to 32 km, within 0.5m precision. Their low power consumption and detailed design enables reliable and long-term use under varying environmental conditions.

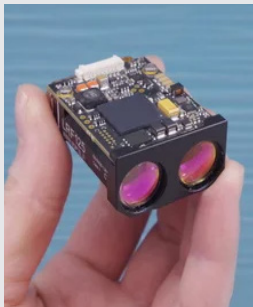
Our local engineers are available to help, from tailoring your specification through to streamlining delivery with our European dedicated export and stock management team.

All our Laser Rangefinder modules are Eye safe Class 1 (EN 60825-1:2014) (IEC 60825-1:2014)

Performance to standard NATO target is given here in Single Measurement Mode with Target size 2.3 x 2.3m, visibility 30%, detection probability > 90%

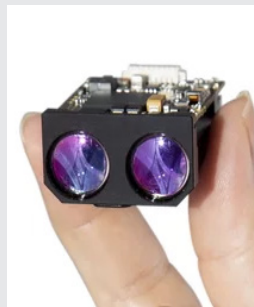


NOPTEL LRF125 Laser rangefinder Module Smallest One 905 nm



- Ultra Low SWaP; 34 x 20 x 48 mm, 34 g, < 1.3 W (< 0.2 W in stand-by mode)
- Wavelength 905 nm
- Ranging capability up to 3 km
- Measurement rates up to 500 Hz
- Precision 0.01 – 0.5 m

NOPTEL LRF126 Laser rangefinder Module Smallest One 1.5µm



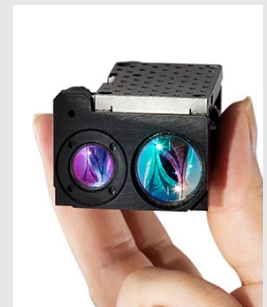
- Ultra Low SWaP; 34 x 20 x 48 mm, 34 g, < 1.8 W (< 0.2 W in stand-by mode)
- Wavelength 1.5 µm
- Ranging capability up to 4.5 km (1.85 km to std NATO target)
- Measurement rates up to 500 Hz
- Precision 0.01 – 0.5m

NOPTEL LRF241 Laser rangefinder Module Small & Long Range



- Low SWaP; 31 x 45 x 120 mm, 150 g, < 2.0W (< 0.2 W in stand-by mode)
- Wavelength 1.5 µm
- Ranging capability up to 6 km (4.2 km to std NATO target)
- Measurement rates up to 500 Hz
- Precision 0.01 – 0.5m

NOPTEL LRX-20A range finder Module Compact & Ultra Long Range



- Low SWaP; 48 x 34 x 67 mm, 120 g, < 3.6W (< 0.2 W in stand-by mode)
- Wavelength 1.5 µm
- Ranging capability up to 32 km (8.6 km to std NATO target)
- Measurement rates up to 200 Hz
- Precision 0.01 – 0.5 m

Cellular for low power UAV applications

Implement remote management and collect data for UAV applications across locations by overcoming the difficult coverage, capacity and cost barriers for battery-operated devices using LPWA modules. Bringing together all the benefits of cellular, with long battery life (up to 10 years) and 20dB increased coverage compared to broadband LTE within urban/condensed areas.

This range is designed specifically for remote device deployment, with best-in-class performing dual-mode modules providing low-cost and extremely low-power technology for low-bandwidth applications covering worldwide 2G/3G/4G networks. Fully compliant with release-14 and 5G ready to support future features.



Semtech (Sierra Wireless) WP7700



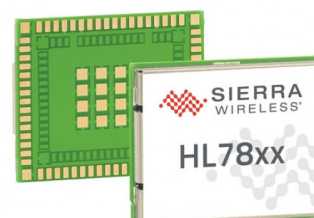
- CF3 form factor
- Ultra low power mode – 200x less for battery/solar-powered applications
- Industrial grade
- Global coverage
- FOTA upgrades
- Covering bands LTE: B1, B2, B3, B4, B5, B8, B12, B13, B17, B18, B19, B20, B26, B28

Semtech (Sierra Wireless) WP7702



- CF3 form factor
- Ultra low power mode – 200x less for battery/solar-powered applications
- Industrial grade
- Global coverage
- FOTA upgrades
- Covering bands LTE: B1, B2, B3, B4, B5, B8, B12, B13, B17, B18, B19, B20 with 2G fallback

Semtech (Sierra Wireless) HL7800/02



- CF3 form factor
- Ultra low power mode – 200x less for battery/solar-powered applications
- Industrial grade
- Global coverage
- FOTA upgrades
- Covering bands LTE: B1, B2, B3, B4, B5, B8, B9, B10, B12, B13, B14, B17, B18, B19, B20, B25, B26, B27, B28, B66 with 2G fallback

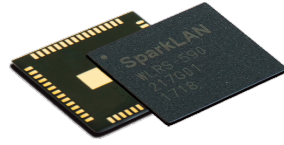
Connectivity solutions

LoRaWan

LoRaWAN™ is designed to enable very low-power devices, such as battery-powered sensor modules, to easily communicate at regional, national and even global levels. LoRaWAN provides secure, bi-directional, multicast communication between end-devices and gateways connected to the network server via standard IP connections

System-in-Package (SiP) solutions for LoRaWan

We also offer a range of stand-alone, compact SiPs for volume applications. Featuring leading chipsets, SiPs can be integrated through a variety of interfaces, such as LPUART, SPI and I2C. Up to 20 GPIOs enabling the connection of multiple sensors, switches and status LEDs to the SiP, reducing overall power consumption.



SparkLAN:

WLR5-590 LoRa IoT Module

- Based on Semtech SX1276
- STM32L073xZ ARM Cortex-M0+
- Support for 868 MHz and 900 MHz
- SiP module
- Dimensions: 13 x11 mm



USI:

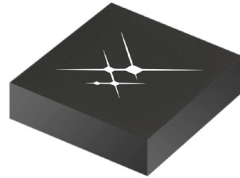
WM-SG-SM-42 LoRa IoT Module

- Based on Semtech SX1272
- STM32L052 ARM Cortex-M0
- Support for 868 MHz and 900 MHz
- SiP module
- U.FL antenna connector
- Build-in Crystals (32 MHz & 32kHz low power)

Front End Modules (FEMs)

Front End Modules boost the performance of a chosen SoC and deliver stronger wireless signals at a greater range, benefiting a UAV design. The performance benefits of a FEM mean you can use a more cost-effective SoC with a more reliable, efficient design to reduce the amount of power consumed.

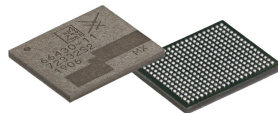
Skyworks supports almost every wireless standard with a dedicated FEM solution - available for every category and standard. Check with our team of experts to discover the latest FEM solutions.



Skyworks Sky66420

Highly integrated RF front-end module designed for LPWAN

- Integrated PA with +27 dBm output power
- Integrated LNA with noise figure of 1.5 dB, typical
- Single-ended 50 Ω transmit/receive RF interface
- Supply voltage: 2.0 to 4.8 V



Skyworks Sky66430

5G Massive IoT System-in-Package

- Integrated baseband, transceiver, RF front end, RAM memory, and power management
- 8.8 mm x 10.8 mm x 0.95mm BGA package, 0.5mm pitch
- Device weight: 229 mg
- Operating temperature range: -40 °C to +85 °C

Bluetooth and wireless modules

Industrial-grade Wi-Fi modules that are quick and easy to integrate with on-board software stacks and device servers to some of the most compact and advanced solutions in the world – including cutting-edge SiP and SoC solutions from industry leaders USI and Airoha

System-in-Package (SiP) Solutions

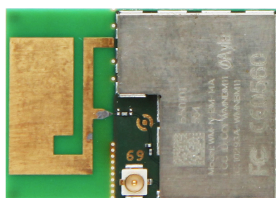
For medium- and high-volume projects, we offer SiP solutions from USI, which provide excellent power-management performance to deliver low-power consumption and extended battery life.

System-on-Chip (SoC) Solutions

Medium- and high-volume applications can also benefit from tightly integrated SoC solutions. Airoha increase opportunities for developers to build connected home software and innovative devices through their range of power-efficient Wi-Fi products.

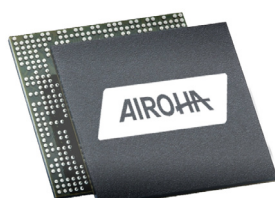


USI SiP Solutions



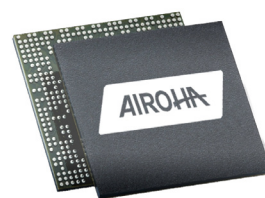
- IEEE 802.11b/g and 802.11n 1x1 single-band 2.4GHz and dual-band, with or without Bluetooth
- Advanced security with WEP 64/128, WPA and TKIP, AES, CCX
- WAPI support
- Serial interface to host – SPI, UART and USB
- RF certification – FCC, CE – with metal-lid shielding

Airoha Wi-Fi / Bluetooth SoC Solutions



- IEEE 802.11b/g and 802.11n 1x1 single-band 2.4GHz and dual-band
- Build-in ARM CORTEX-M4 application processor for Wi-Fi, TCP/IP stack
- UART, I2C, SPI, I2S, PWM, SDIO, ADC
- 32 GPIO
- 7.1 x 7.1 x 1.05 mm

Airoha GNSS SoC Solutions



- Supporting: GPS / GLONASS / Galileo / BeiDou
- Ultra-low-power
- Dual-frequency
- High precision positioning
- 20 Hz Update frequency
- Build-in LNA
- Tracking Sensitivity: -165dBm

GPS and GNSS modules

We offer the industry's smallest fully-integrated and highly-sensitive GPS/GNSS modules. These Global Positioning System (GPS) and Global Navigation Satellite System (GNSS) modules are designed to support ultra-compact applications with features such as low-latency velocity, position outputs and position updates to maximise their performance for UAV's, even in harsh signal environments.

Airoha GNSS modules

Industry leading modules with a broad range of GNSS SOC chipsets that offer accuracy, fast time to fix and power efficiency that's needed in UAV applications with high tracking sensitivity for enhanced performance in dense urban environments.

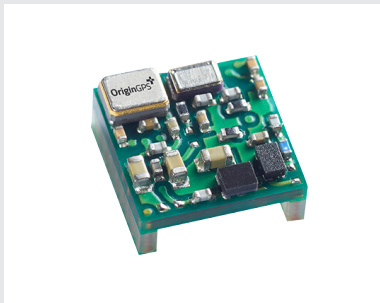
Origin GPS' Spider family

Featuring proprietary NoiseFree Zone System™ technology for high sensitivity and noise immunity even under marginal signal conditions with superior sensitivity and outstanding performance.

The patented architecture in these modules detects changes in context, temperature, and satellite signals by maintaining and updating its internal fine time, frequency, and ephemeris data, achieving a state of near-continuous availability, while consuming microwatts of battery power.



Origin GPS – Multi Micro Spider ORG4033



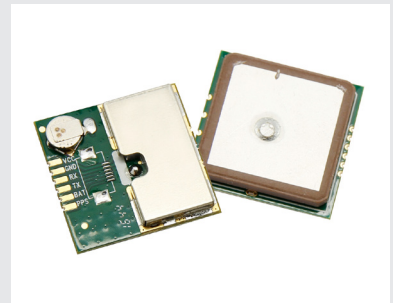
- Frequency band: GPS/GLO/BE/GAL
- Sensitivity (dBm): -165
- Size (LxWxH): 5.6 x 5.6 x 2.65 mm
- Weight: 0.2 g
- Power consumption: 9mW

Origin GPS Multi Spider ORG4572 – R02/R04



- Frequency band: GPS/GLO
- Sensitivity (dBm): -165
- Size (LxWxH): 7 x 7 x 1.4 mm
- Weight: 0.2 g
- Power consumption: 9mW

Airoha MT3337 All-in-one GPS SoC



- Frequency band: GPS/GLO
- Sensitivity (dBm): -165
- Size: 52 mm²
- Power consumption: 18mW
- Compatible with: MT3333

We can work with your team to customise GPS/GNSS modules with multiple antenna configurations and to add onboard flash enabling you to quickly integrate GNSS functionality without adding sizeable hardware.

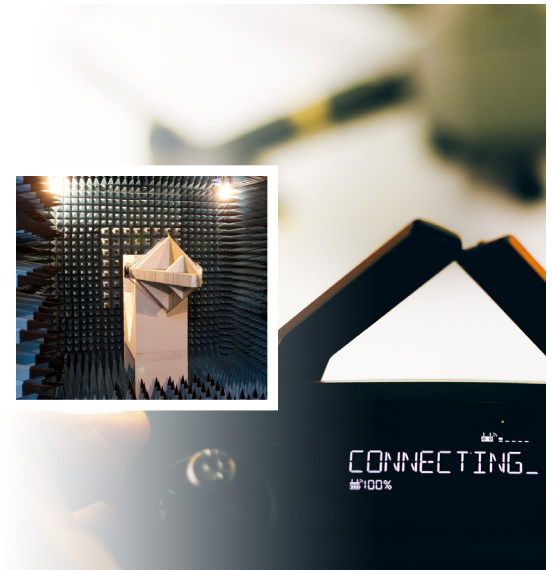
Antennas

A compact UAV design may need the use of an onboard antenna. These antennas can be chip, patch, PIFA antennas, or embedded into the PCB itself. Many factors affect the performance of these types of antenna including - position of other components, the orientation of the unit, materials used in the outer casing, and proximity to the outer casing. A poorly optimised or tuned antenna will have an adverse effect on the wireless range and power consumption.

Reducing RF inference has enabled multiple wireless technologies to co-exist within a few millimetres of one another. Therefore, antenna efficiency, RF isolation and antenna selection are all critical considerations.

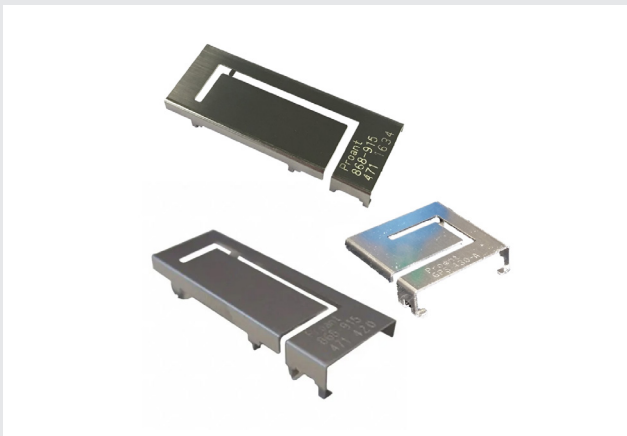
We offer a wide range of antennas specifically developed for every wireless technology standard.

Through ProAnt, your RF design can be tested and refined in their anechoic chamber to get the best possible results from your solution, whether it features a standard, modified or fully customised solution.



ProAnt

OnBoard SMD metal sheet PIFA antennas



- OnBoard SMD metal sheet PIFA antennas.
- PCB antennas with cable and connector
- External antenna's
- GSM/UMTS/LTE
- GPS/GLONASS
- WLAN/Bluetooth/Zigbee
- ISM bands: 169/315/434/868/915 MHz

Johanson

Miniature RF ceramic chip antennas



- Low-Temperature Cofired Ceramic (LTCC).
- Great detuning resilience and
- Extreme temperature stability (~2ppm)
- GPS/GLONASS
- WLAN/Bluetooth/Zigbee
- ISM bands
- WiMAX
- Ultra-wideband



Your technical design specialist

A complete product and service offering

We deliver total support for your products, designs and solutions, from concept to post-production. Our leading-edge technology portfolio, technical expertise and custom-design capabilities provide you with a service like no other, for any application in any sector.

An extension of your engineering teams

We have dedicated teams of technical specialists to bring design expertise to your existing engineering teams. Many of our engineers are supplier trained and will work hand in hand with you to get the most from your design and the technology within. With Acal BFi, you can concentrate on your core technologies whilst integrating the latest technology to bring a more advanced solution to market.

Hand-picked solutions from carefully selected technology partners

We offer advanced solutions across our specialist technology areas from the world's leading suppliers and manufacturers. Our close partner relationships enable us to offer solutions beyond the standard product range and tailor these to your exact specifications and requirements.

Custom design to your requirements

From our close supplier relationships and in-house expertise, we can develop and deliver custom designs to your exact requirements. Whether your solution uses fully or semi-custom components, modified standard or a mix of standard solutions, we make sure you get the right solution in terms of performance, cost and specification.

Local support from the experts

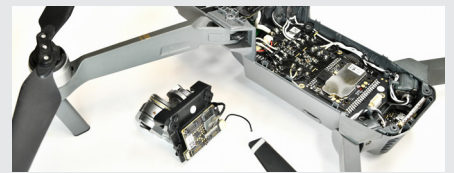
Regardless of your UAV's application, we work with you to find the right balance of innovative design and leading-edge technologies. Support can start at any stage and lasts for as long as you need it.

Design phase support



- Advice on the best technology for your needs
- Full technical support from initial start to fine tuning
- Detailed responses to technical queries
- Direct access to manufacturer's technical support
- Samples and demonstration models available

Pre-production phase support



- Access to our European Technical Competence Centre to solve complex design issues
- Advice on regulatory compliance issues
- Access to our UK-based EMC chamber for pre-compliance testing

Production phase support



- Continued technical support for unforeseen production issues

Developing an enhanced technological future together

To benefit from our expertise and in-house capabilities, it's important that you contact us at the earliest stage possible within your project to ensure you don't needlessly spend or use resources, as well as identifying all hidden improvement potential from the start.

You can connect with our experts immediately online or face-to-face when initial project details are available. Design proposals, budget quotes and prototypes are available within a few days.

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