
Timing & Synchronization
Atomic Clocks & Oscillators
Testing & Simulation
Search & Rescue
Custom Engineering
orolia
PNT
Aerospace
Ground Forces
Military Aircraft
Commercial Aviation
Critical Infrastructure/ICS
Naval Operations
HOW CAN WE HELP YOU TODAY?

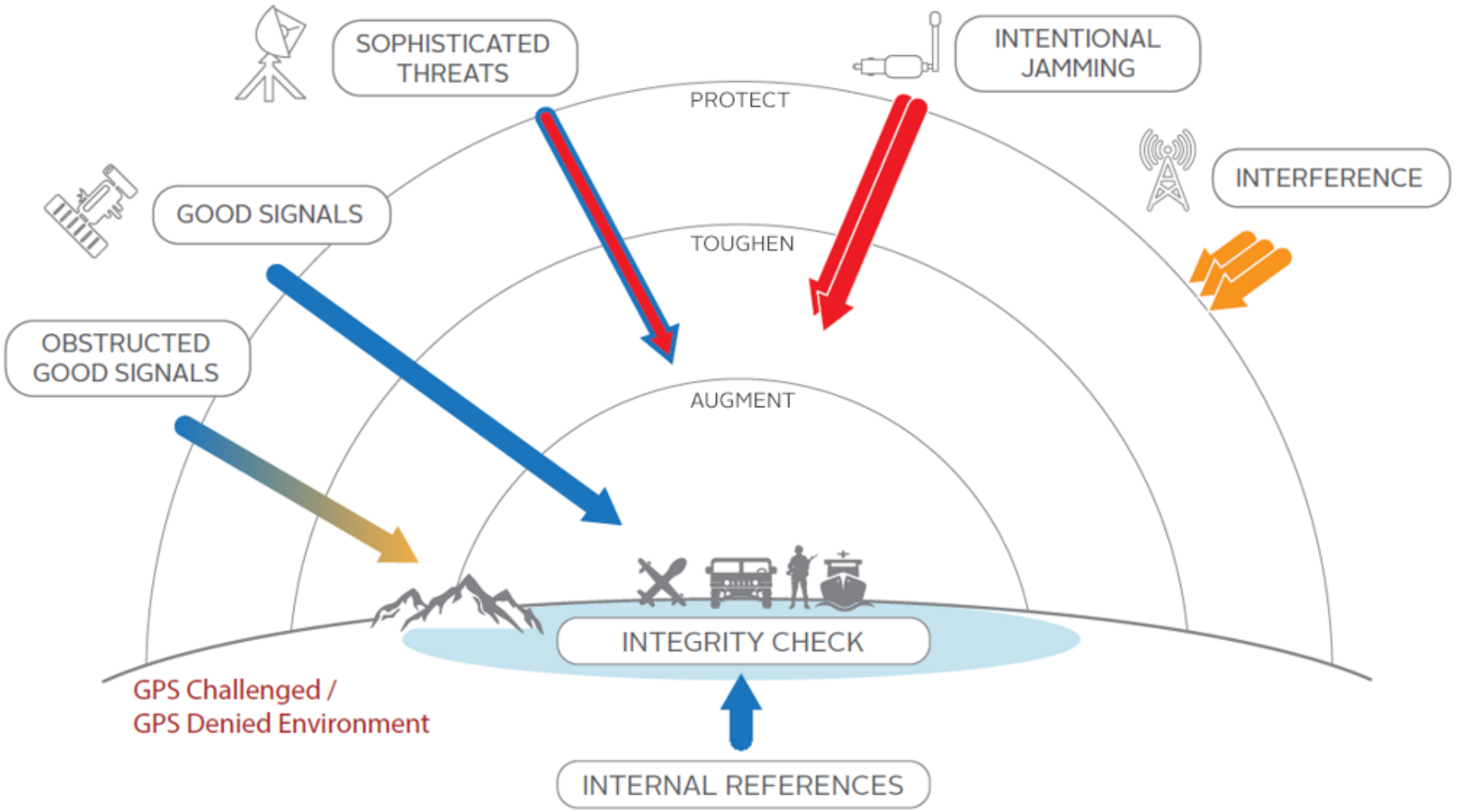
WHO IS OROLIA?

A Reference GNSS Critical Applications Specialist With Worldwide Leadership Positions

- European Private Company Founded in 2006, with a Strong US Footprint
- Develops, Manufactures and Sells Electronic Equipment and Software to Assure Precise and Reliable Positioning, Navigation and Timing (PNT) Data for Critical Operations
- Supplier of Large System Integrators, Governments and Blue-Chip Companies
- 2nd Largest High-Precision Timing Specialist
  N°2 World Leader for GPS/GNSS* Signal Simulation
- Only Independent Provider of Resilient PNT Solutions
- 4 Main Hubs; Industrial Presence in 4 Countries

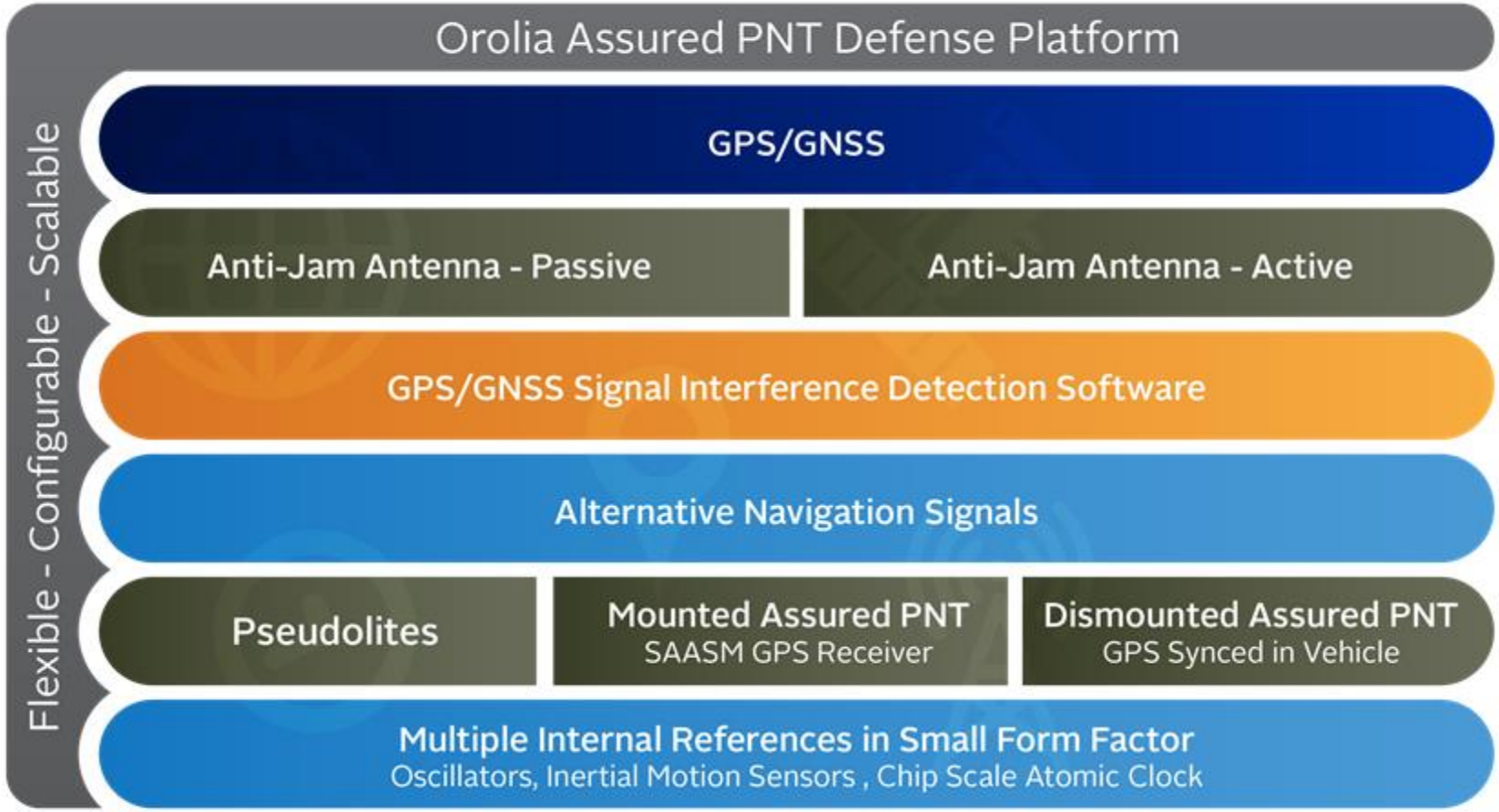
** GNSS: Global Navigation Satellite Systems such as GPS, Galileo, Glonass or Beidou*

GNSS DENIAL COMES FROM ACCIDENTAL OR INTENTIONAL (JAMMING AND SPOOFING) INTERFERENCE

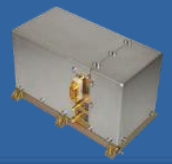


A LAYERED DEFENSE APPROACH

The most comprehensive suite of PNT IDM solutions available today



OROLIA PRODUCT PORTFOLIO

Industry	Aerospace	Defense	Critical infrastructure	Enterprise
				
Resilient Timing & Positioning	Versa Line  	SecureSync & White Rabbit  		
Atomic Clocks & Oscillators	RAFS  LPFRS/AV1  SRO 5680 	SRO 100  mRO-50 		
Testing & GNSS simulation	GSG-8 			GSG-5/6 
Distress Beacons	Ultima Line 	SARBE CSAR beacon 		

TIMING & SYNCHRONIZATION

PNT PORTFOLIO OVERVIEW

Application/customer profile

Application

	Embedded / OEM	Integrator	Operator
Mobile mission systems	 Tsync VPX		 VersaSync  VersaPNT
Critical infrastructures	 Tsync PCIe  WR-LEN  EdgeSync		 SecureSync  WR Z16, WR ZEN TP-FL

SECURESYNC® TIME & FREQUENCY REFERENCE SOLUTIONS

Industry-Leading, Modular Resilient Time & Frequency Synchronization Platforms

- Synchronize to GPS, SAASM GPS, Galileo, multi-GNSS and many other timing references
- Generate virtually any time and frequency output signals
- Multiple internal oscillator options
- Built-in high-performance NTP server; PTP options
- Modular (configure-to-order) ruggedized shock and vibration-tested chassis (1RU)
- Exceptional operating temperature range of -20°C to +65°C
- Secure network management and control
- Platform approach allows easy integration of specific capabilities

DATASHEET

BROCHURE

PREVENTING INTERFERENCES AT ANTENNA LEVEL

Passive Anti-jam antenna 8230AJ
Horizon blocking antenna

GPS Dome
Null steering in direction of interference

⇒ Both anti-jam antenna 8230 and GPS dome can be combined for higher interference rejection

⇒ Orolia works also on CRPA antenna (longer-term projects)

STL – SATELLITE TIME AND LOCATION SIGNAL

New signal available today

- Broadcast on the Iridium sats

>30 dB stronger than GPS

- Higher jamming and interference resistance
- Operates indoors

Encrypted signal

- Inherently anti-spoof
- Subscription based service
- Available for civilian use
- Requires a dedicated Receiver (as a SecureSync option board) and antenna

EDGESYNC AT A GLANCE

Timing on the Leading Edge

A network timing edge platform designed to provide high performance, scalability, ease of use, and manageability at a cost-effective price.

- Network Timing Interfaces: Dual 1 GbE RJ-45/SFP Ports
- IEEE 1588-2008 (PTP v2): Master, Slave, IPv4/v6, Ethernet Layer 2, Multicast, Unicast Transport, E2E, P2P Delay Mechanisms
- Synchronous Ethernet: Master, Slave, RJ-45 port or Optical SFP, ESMC Support
- Network Timing Protocol: SNTP Server (IETF RFC 4330), IPv4 Unicast, Manycast and Broadcast Modes
- PTP Profile Support: Default, Telecom:
  - ITU-T G.8265.1 (Telecom Frequency),
  - ITU-T G.8275.1 (Telecom Phase/Frequency Full On Path),
  - ITU-T G.8275.2 (Telecom Phase/Frequency Partial On Path),
  - Power: IEEE PC37.238 (Power Profile),
  - IEEE 61850 (Power Utility Profile), SMPTE

DATASHEET

BROCHURE

TIMING & TRACEABILITY PACKAGE (TTP): A SERVICE APPROACH

TTAAS® + EdgeSync + GPSP = TTP (Timing & Traceability Package)

TTP provides:

- ✓ Increased resiliency through ability to backup GNSS traceable time with network originated traceable time – which have very different failure modes
- ✓ Continuous, GNSS independent, traceability monitoring of delivered time with reporting, logging and alerting capabilities
- ✓ Built-in security through VPN setup for time feed delivery and monitoring/reporting data exchange
- ✓ Easy to deploy (no antenna access, cabling), anywhere (no need for proprietary fabric, leased line or be inside a datacenter)
- ✓ Simple to manage – doesn't need to be touched once it's setup

HOPTROFF

Combination of Gold Premium Service Packages benefits with additional GNSS independent timing and traceability services

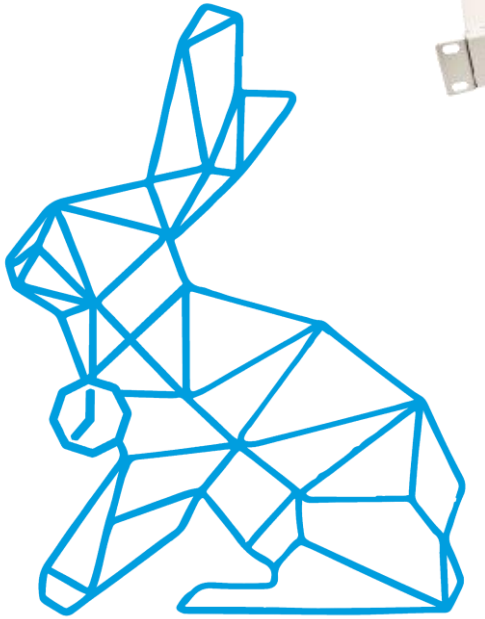
- ✓ UTC time traceability monitoring with logging and alerting mechanism
- ✓ High availability, network based, traceable, backup / fallback time reference (in case of GNSS loss)
- ✓ No specific requirement on network/IT infrastructure

FOCUS ON SUB-NANOSECOND TIMING

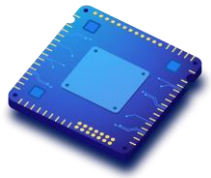
Sub-Nanosecond Timing

White Rabbit Technology uses the Precision Time Protocol (PTP) to achieve sub-nanosecond accuracy fortime transfer and frequency distribution applications.

White Rabbit Z16



High Accuracy Timing IP Core (HATI)



White Rabbit is the reference protocol for High Accuracy time distribution in financial networks. Its accuracy, failover capabilities and interoperability with 1PPS, PTP and NTP make White Rabbit a comprehensive solution time sensitive applications.

Its objective is to develop a fully deterministic Ethernet-based network for sub-nanosecond accuracy time transfer.

The White Rabbit Project focuses on:

- Sub-nanosecond accuracy
- Flexibility
- Predictability and Reliability
- Robustness
- Open Source Hardware and Software

BROCHURE

HATI – NATIVE WHITE RABBIT SUPPORT

HATI is being integrated with Arista, Cisco and LDA Technologies L1-switches.

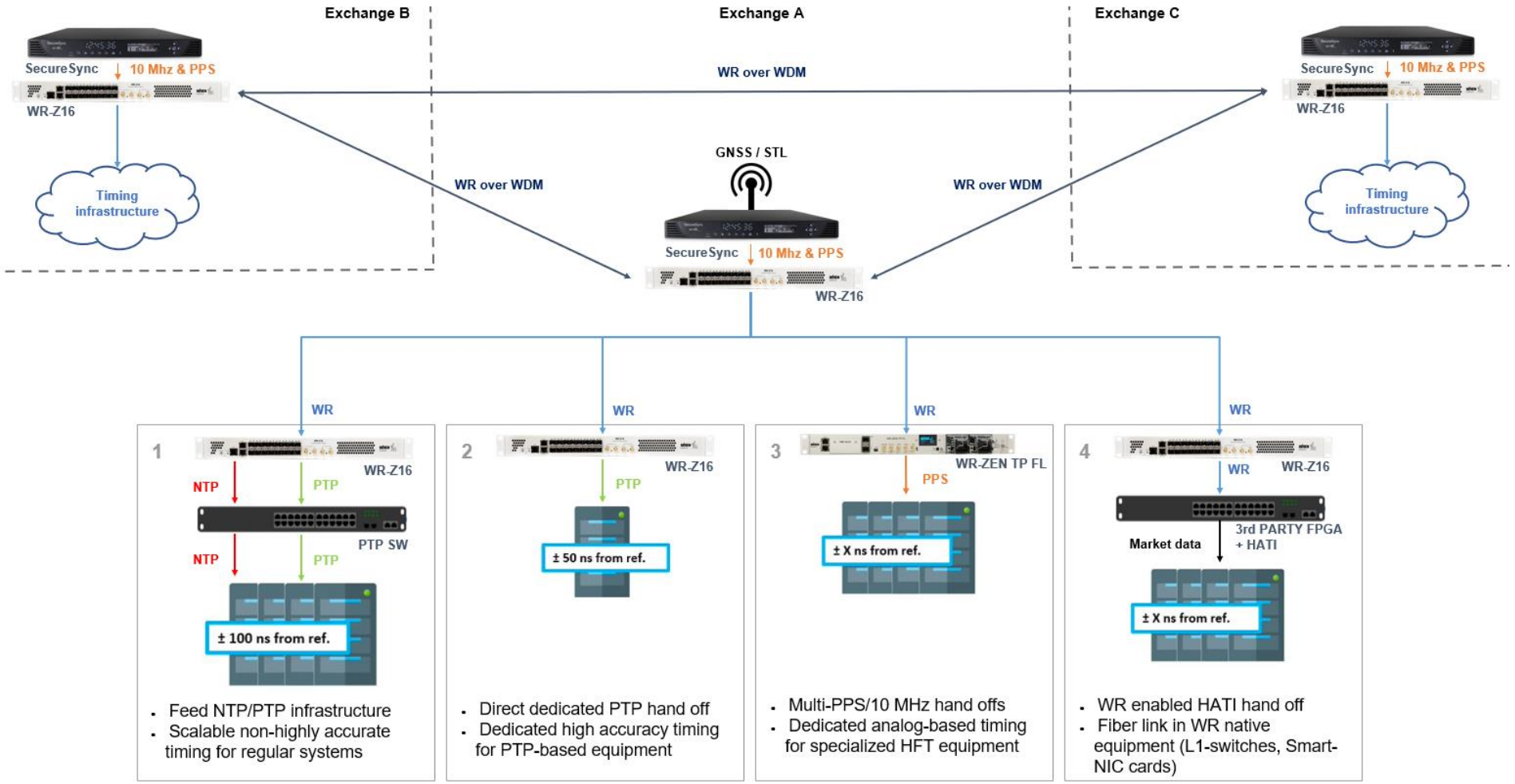
High Accuracy timing integration in Xilinx FPGAs (including US+).

Sub-nanosecond time accuracy on NICs can be achieved leveraging this technology.

No need for expensive oscillators/clocks or dedicated hardware.

Distribution over fiber without calibration. Remove the need for coaxial cables.

TIMING INFRASTRUCTURE IN FINANCIAL NETWORKS



ATOMIC CLOCKS & OSCILLATORS

FOCUS ON NEXT-GEN TECHNOLOGIES

The new **mRO-50** meets core telecom, military and critical infrastructure requirements to provide wider thermal range, quicker lock and higher stability.

Key differentiators

Low SWaP-C

- Higher Stability
- Low cost
- Low power consumption

MILITARY

- Military communication systems
- Key Infrastructure Emergency Vehicles
- Radars
- Aircraft and UAVs

COMMERCIAL

- Secured telecom
- Underwater geological applications
- Autonomous cars
- Aircrafts

PRODUCT PAGE

PRODUCT VIDEO

www.orolia.com