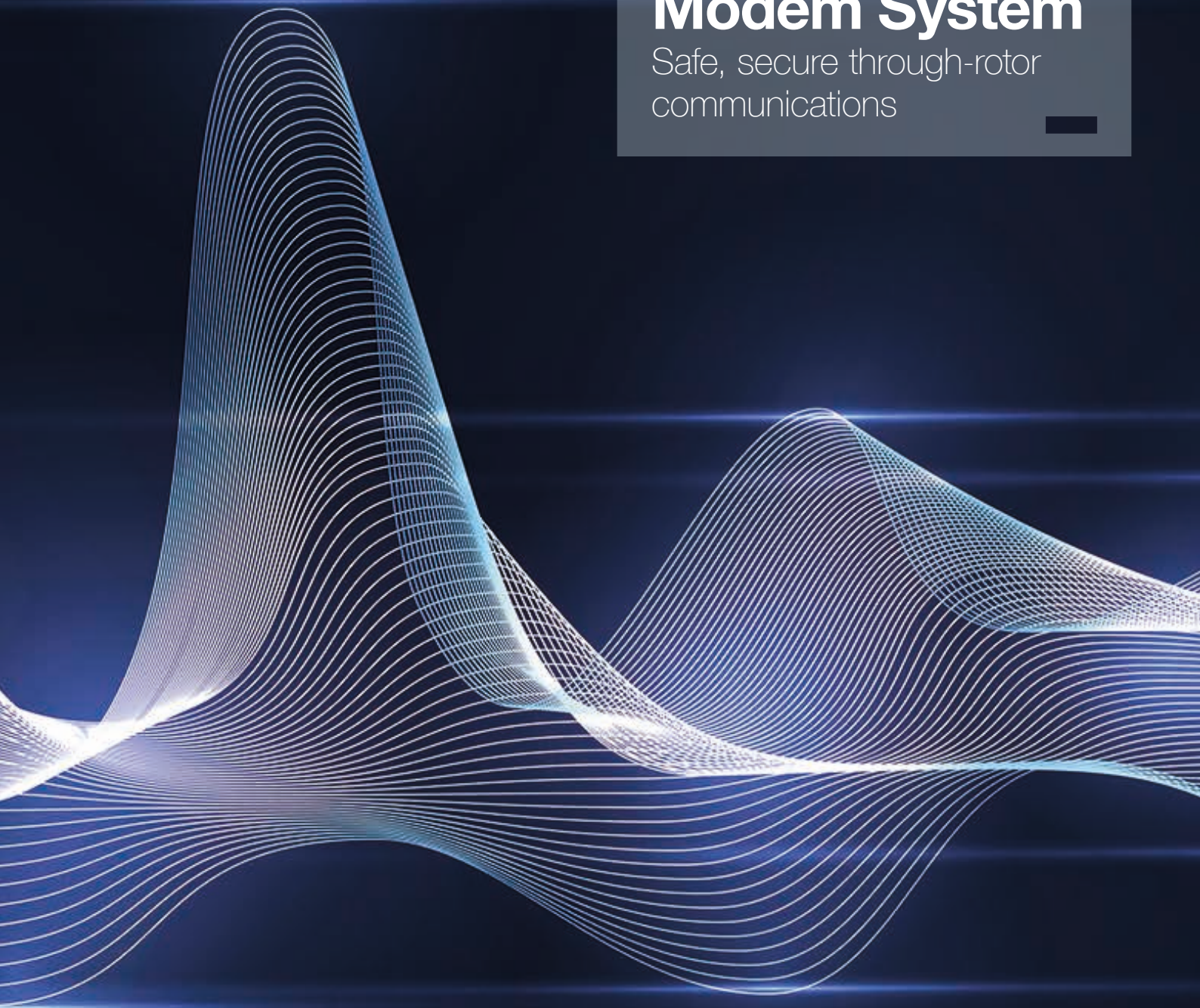
DEFENCE AND SPACE
SECURE COMMUNICATIONS

Proteus™ Unity Modem System

Safe, secure through-rotor communications



AIRBUS

Continuous communications at your fingertips

The Proteus™ Unity Modem System is the only dual-use satellite modem proven to operate efficiently through rotor blades.

This advanced Software-Defined Radio (SDR) system delivers resilient, safe, secure IP communications on all commonly-used frequency bands across land, naval and airborne platforms.

Helicopter users have an increasing need to send large amounts of data to and from the rotor platform over a wide geographic area; a capability which has been a reality for fixed wing aircraft for many years.

Sharing and receiving high data rate intelligence and media has become a norm in day-to-day activities thanks to advancements in connectivity, and as such, users expect good connectivity regardless of what platform they are on. This expectation is no different for airborne users. Rotorcraft need higher throughput with greater efficiency to keep satcom bandwidth usage and costs low.

Proteus™ Unity employs a Hybrid Frequency Hopping Spread Spectrum (FHSS) / Direct Sequence Spread Spectrum (DSSS) waveform to enable satcom through the rotor blades. Proteus™ Unity uses the forward link to provide an optimised return path that continually adapts to the received signal and varies the throughput to ensure the link is maintained.

Proteus™ Unity Modem System is designed to get around anything that might block your mission-critical communications.

Developed by Airbus, it's based on 40 years' experience in delivering resilient, secure communication systems trusted by military and government customers.

Dependable at all times in all locations

Greater resilience

- Resistant to rotor blade blocking and agnostic to blade size, number of blades, single or twin rotor platforms
- Uses hybrid Frequency Hopping Spread Spectrum (FHSS) and Direct Sequence Spread Spectrum (DSSS) techniques
- Automatic link adaptation for rain fade, platform movement, satellite footprint variation
- Provides interference-free, through-rotor communications to helicopter satellite terminals

Increased efficiency

- Highly scalable, supporting up to 125 modems in a single network
- Automatically shares bandwidth to optimise satellite resources and cost-efficiency
- Suitable for fixed, land mobile, airborne and naval platforms
- Supports all commonly-used frequency bands to reduce equipment required in the field
- Hosts multiple waveforms for different uses with simple software upgrade, reducing through-life costs
- Designed for easy integration into modern IP-based networks, including support for QoS and advanced routing

Increased security

- All configuration and management interfaces are secured so the system cannot be maliciously re-configured or monitored
- All network control traffic is secured and protected from exploitation, including that for DAMA and ACSM
- Entire modem is designed against UK CESG CPA baseline standard
- Hardware security module is designed against NIST FIPS140-3 Level 2 standard, providing independent assurance

Safe operation

- Supports Receive Only mode, allowing users to receive without transmitting
- Supports ESM Mode, enabling simultaneous operation of Electronic Support Measures and satellite communications equipment
- Eliminates the backscatter of RF into the aircraft cabin by not transmitting into a overhead blade and causing RF reflections

Easier to deploy

- No ITAR components, allowing export to most countries
- Standard sizes and installation requirements
- Easy to use with automated modem management
- Quickly re-plans network as requirements change and automatically disseminates into the field
- Seamless integration with IP networks, with standard interfaces and fully-featured integrated router and switch

Airborne

Ground 1U

Tactical

The solution

Platform

- Software-Defined Radio system
- Available in both 1U ground and 1/2 ATR airborne form factors – fully qualified for their relevant environments
- Airborne and Tactical form factor qualified to DO-160
- Stores up to 10 waveforms
- Can host Unity and future Airbus waveforms
- Can host hardware crypto module to provide secure functionality for waveforms

Waveforms

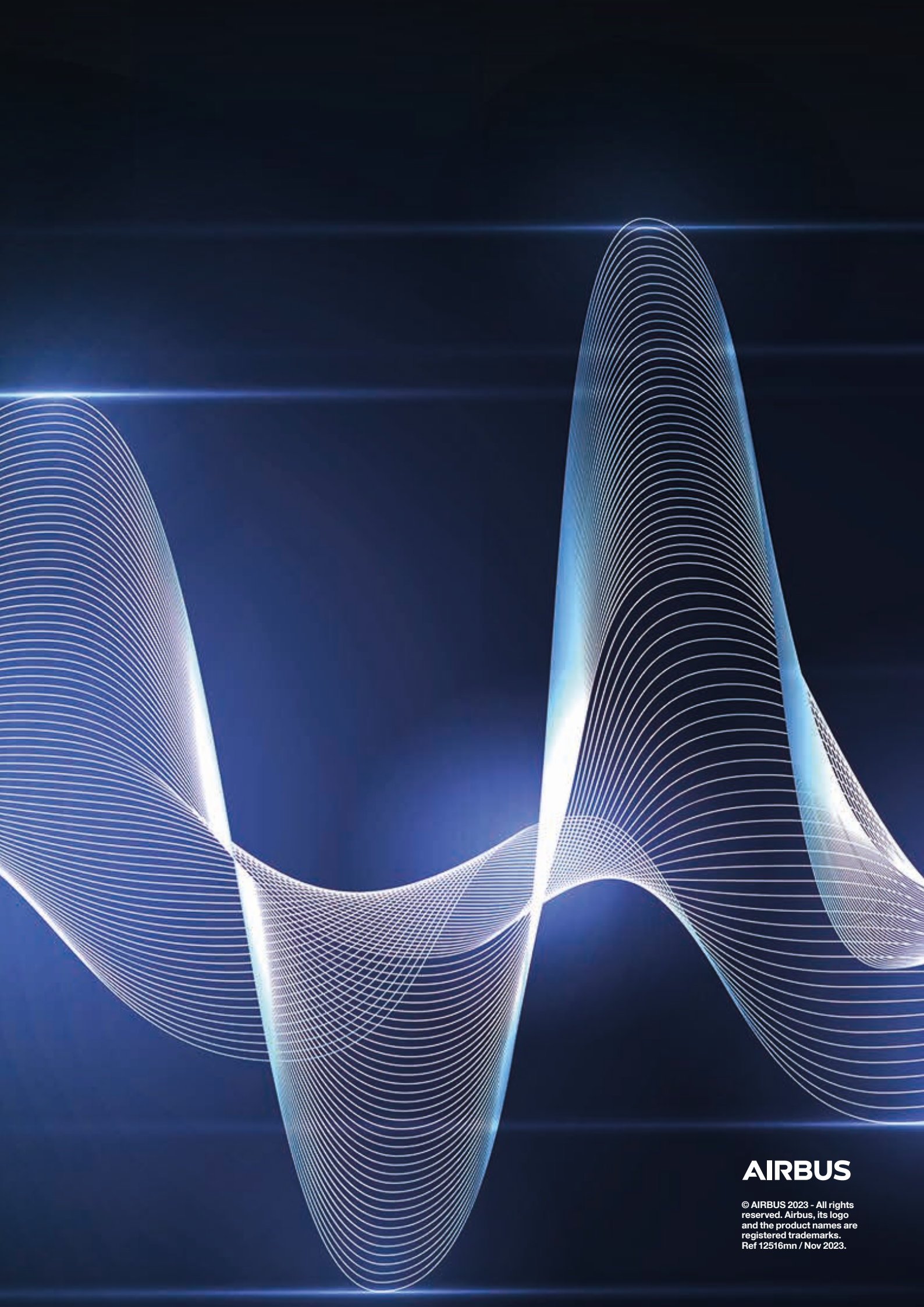
- Supports up to 125 modems in each network
- Supports Adaptive Coding, Spreading and Modulation (ACSM) both to and from terminal
- Rapid automatic management on modem log in and log out
- RFC standard interface for user traffic, QoS and configuration and management
- The Unity waveform supports over 20 Mbps per Modem
- Designed for assured security

Management System

- Allows rapid and easy planning in response to user communications or business need
- Automates complex processes
- Monitors and assures network performance and fault management
- Calculation of link budgets in both benign and stress situations
- Configuration dissemination and Implementation
- Fault and performance management of modem systems

Hardware Specifications

	Ground Variant	Airborne Variant	Tactical Variant
IF Interface	Extended L-band (950 to 2150 MHz)		
Input Power Levels	-70 dBm to -15 dBm		-70 dBm to -10 dBm
Output Power Levels	-40 dBm to -5 dBm		
Frequency Reference Support	External 10 MHz		External 10 MHz TNC, 50Ω Internal 10 MHz - with/without GPS.
Time Reference Support	Yes		
User Data Interface	10/100/1000 Base T	10/100 Base T	MIL-STD-38999 10/100 Base T
Form factor	19" Rackmount 1U	Sub ½ ATR ARINC 193.5 (H) x 124 (W) x 176.5 (L) mm	60 (H) x 320 (W) x 250 (L) mm max
Weight	6 Kg	<5 Kg	< 7Kg (15.4 lb)
Temperature	0°C to +50°C Operating -10°C to +60°C Storage	-40°C to 70°C for 30 minutes -40°C to 55°C Operating -55°C to 85°C Storage	-31°F to 131°F Operating -67°F to 185°F storage
Cooling	Internal Fan Cooling	Forced Air	Conduction cooled
Power	110V to 240V AC 65W	28V DC 70W	28V DC or 110V to 240V AC



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