

Helix

Secure tactical communications starts here. Australian-made Helix.

Helix is a sovereign communications system enabling our defence force and its partners to connect and operate with total security.



Sovereign ownership enables one platform to suit a wide range of missions



A complete system for any platform, supporting mounted and dismounted operations



Intuitive, user-focused interface for simple operation & configuration



High assurance design allows the most trusted communications



Low cost and highly portable



Interoperable with military and commercial communication systems



Rugged and reliable

Communications

- Internal intra-team radio
- Internal software defined radio
- Simultaneous voice, data & position location information

Situational Awareness

- Integrated compute & display platforms
- Human friendly user interface

High Assurance Crypto

- In-built HA modem, Layer 2 encryptor & cross domain
- Secure integration with existing wideband & narrowband radios

Challenge

Current communications offer a variety of challenges for the Australian Defence Force (ADF). Not only are they very expensive to acquire with high total cost of ownership, they lack flexibility to be integrated in multiple platforms and to be interoperable for missions with our broad range of partners. A lack of sovereign control limits the management of digital platforms for the future fight.

The ADF operates in a dynamic and congested environment. Deployed forces currently deal with complex interfaces that are far from intuitive, increasing operational risk.

There's a clear need for a flexible, Australian-made solution that enables the ADF to meet its objectives now and in the future. That's where Helix comes in.

Technical Specifications

Internal Combat Net Radio / PRR	
Frequency Range	30MHz to 2.5GHz
Power Output	0.25W to 5W
Harmonic Suppression	60dBc
Sensitivity	~ -110dB +/- 4dB
Security	
Cryptography	Penten High Assurance Cryptographic Engine Layer 2 mesh compatible encryption Post quantum enhancements
Key Management	Peer Key Manager, Over-the-air rekeying (OTAR)
Waveforms	
Narrowband Modem	MIL-STD-188-110A/B/C, STANAGs 4539, 4415, 5065, 3G ALE, 4G ALE
Personal Role Radio	Narrowband Frequency Hopping
Narrowband Frequency Hopping	P25, P25+, Future expansion to other Software Defined Waveforms inc Sovereign Narrowband and Wideband
MANET-MESH	Solinnov Halite
Position Location Information	
GPS	L1C
Power	
Power Input	12-48V DC
Power Consumption	Peak: 32W Signaller Avg: 6W Soldier Avg: 4W
Red Side Interfaces (Pt)	
Bulk Data / Power	USB / Ethernet / Input Power
Headset	Audio In/Out, Power
Black Side Interfaces (Ct)	
External Narrowband Radio	USB / ETH / PTT / Balanced Audio
External Bulk Data / Power	USB / ETH / Pass-through Power
PRR / GPS / BT	TNC (50Ω)
CNR	TNC (50Ω)

Solution

Helix is a tactical communications solution that facilitates easy, effective, and secure transmissions for defence and emergency services.

Penten's tactical communications technology, Helix, is designed and manufactured in Australia. This system provides sovereign High Assurance (HA) encryption for the C4 network to enable secure communications between the joint force, regional partners and first responders. Connectivity is provided for HF, VHF or UHF radios, wireless ad-hoc networks (MANET), P25 systems and it includes an integrated personal role radio (PRR). The Penten Helix delivers secure voice and data services in a portable module that adapts to complex, congested and dynamic environments.

Helix builds on the proven success of adapting Penten's HA encryption across a range of mobile technology platforms. The unique sovereign cryptography is integrated to uplift existing radio products, directly connect teams or securely connect tactical networks. The intuitive, user-focused interface is designed to make operation simple. This means the war fighter can focus on their mission, not the technology.

Reduced size, weight, power and cost definitively decreases physical and cognitive burden, while increasing interoperability with other systems.

