
STR WaveStream

Wireless Mesh Node platform that enables a broad range of IP network services, including video streaming, data synchronisation and streaming, and secure remote access.

WaveStream is purpose-built for the offshore industry, delivering robust, high-capacity, reliable, and flexible broadband communications between offshore installations and vessels. With seamless mobility across the network, critical applications—including video streaming and data transmission—remain uninterrupted as assets move within coverage.

Offshore operators need reliable broadband between installations and vessels, but shifting assets, long distances, interference, and harsh conditions can interrupt mission-critical video and data transfers. WaveStream from STR solves this with a mobile, self-forming/self-healing wireless mesh that maintains seamless mobility with zero-delay handover, preventing session dropouts as assets move. With 32db power output enabling +8 km links, smart channel management, multi-hop performance without bandwidth loss, rugged all-outdoor design, and built-in AES-256 encryption, clients gain secure, high-bandwidth connectivity and rapid mobilisation.



Key features

- Self-configuring routing with automatic optimal path selection
- Auto-provisioning of new nodes when added to the network
- Self-forming and self-healing mesh architecture
- Continuous route optimisation for maximum bandwidth
- Scalable design that improves reliability and capacity as nodes are added
- Multi-hop capability with no bandwidth loss over multiple hops
- Smart channel management to mitigate interference
- High-bandwidth support for mission-critical IP applications
- Long-range performance: 3-Watt RF power enabling +8 km links (Line of sight dependent)
- Seamless mobility with zero-delay handover
- Built-in 256-bit AES encryption engine
- Offshore-ruggedised design for harsh environments
- Compact, single unit for rapid mobilisation

Benefits

- Fast mobilisations with minimal configuration
- More reliable connectivity with automatic rerouting around link issues
- Uninterrupted video and data sessions as vessels/assets move through coverage
- Increased network capacity and resilience as operations scale
- Stable performance in dynamic RF environments with reduced interference
- Secure communications by default without added equipment
- Lower operational risk and downtime for critical data-driven activities
- Internet connectivity can be shared across the mesh, enabling fleet-wide remote operations and support

TECHNICAL SPECIFICATIONS

PROPERTIES	DESCRIPTION
Unit type	All outdoor, rugged mesh node Dual radio with 2x2 MIMO per radio
Radio operation	OFDM / TDD with CSMA CA
Channel bandwidth	5/10/20/40 MHz
Modulations	CCK, BPSK, QPSK, 16 QAM, and 64 QAM
Frequency band	5.180 ~ 5.825 GHz ISM Maximal radio output power 32 dBm Maximal receive-sensitivity -100 dBm
Antenna	Collinear 5GHz: • Gain 12dBi • Polarization Vertical or Horizontal • Coverage 360 deg • Elevation Beam width 7 deg • ETSI specification EN 302 326
Interfaces	Ethernet one GbE interface Antenna four N-female connectors
Physical and Electrical	• Size 202 mm (7.9 in) diameter x 515 mm (20.3 in) height • Weight 7 kg (16lbs) • Typical power consumption 60 Watt • Power supply 90-264 VAC
Environmental	• Operating temperature: -25°C (-13F) to 65°C (149F) • Storage temperature: -30°C (-22) to 70°C (158F) • Operating humidity: 5 to 95% non-condensing
Standards compliance	• Radio FCC part 15Class A Digital Device, intentional radiator • EMC FCC 47 CFR part 15 • Safety IEC60950-1 CB report / UL60950-1 / TUV EN60950-1
RF safety	FCC OET Bulletin 65 IP66 CE mark