

X2nSat's FIXED APPLICATIONS COMMUNICATIONS TERMINAL

Offered in partnership with Thuraya, X2nSat's satellite terminal enables connectivity for remote assets and sensors for monitoring, control and security of critical applications in the oil & gas, utilities, mining, banking and government sectors.

By utilizing our robust IP-based, highly secure, two-way communications network, you can extend the deployment of IoT applications in real-time beyond the traditional coverage areas of cellular networks. The terminal can also be used to provide redundancy and backup communications for mission-critical applications via satellite in situations where highly resilient communications is required in times of crisis or natural disasters.



Real-time, secure, two-way communications

X2nSat services enable real-time monitoring, management and control of remote assets and operations. Field devices, RTUs and sensors such as gas valves, smart grid sensors, water pumps, reservoir level indicators and recloser RTUs can be accessed and managed remotely in real time. In addition, the service provides cyber-security protection by using the same encryption as commercial Virtual Private Network routers as well as Asynchronous 256 bit encryption.

Flexibility of integration

The high performance terminal supports a broad range of applications by enabling an interface agnostic approach. **X2nSat** services deliver reliable, affordable connectivity, regardless of the infrastructure or environment, to manage assets and real-time information to quickly respond to events. Onboard memory enables the loading of local applications onto the terminal for added control and flexibility.

Reliable and affordable satellite connectivity

The **X2nSat** network offers reliable L-band connectivity, resilient to harsh weather conditions, and brings dependable performance to locations where existing wireless and terrestrial systems are overloaded or inoperable. The terminal relies on remarkably efficient bandwidth usage, low-latency IP networking, and optimized power consumption, to make real-time remote monitoring and communications more affordable than ever and lower your total cost of ownership throughout the lifetime of a project.

Key advantages

- IP-based networking
- Low-latency for instant message transfer and real-time monitoring with no delays
- AES 256 encryption
- Two-way send/receive connectivity
- Low Total cost of ownership with bandwidth-efficient networking and no minimum billing increment or overhead charges
- Multicast and broadcast capability enabling efficient mass polling and message distribution
- Embedded GPS and GLONASS
- Ruggedized highly reliable terminals for operation in harsh weather conditions
- Interface agnostic with Ethernet and Wi-Fi, support for other interfaces such as USB, serial, Modbus, CAN Bus is also possible

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Terminal specifications

SATELLITE COMMUNICATION

TWO-WAY COMMUNICATIONS

| | |
|-----------------------|---|
| Narrowband IP | UDP and TCP/IP supported |
| Frequency Band | TX 1626.5 to 1675.0 MHz R X 1518.0 to 1559.0 MHz Typical latency <2 sec 100 bytes |
| Transmission Security | Link encryption AES-256 |

INTERFACES

| | |
|------|------------------------------|
| GNSS | GPS + GLONASS (L1 frequency) |
|------|------------------------------|

EXTERNAL INTERFACES

| | |
|---|---|
| Power | 10 to 32 VDC, via multi-pin connector, short circuit and surge protection |
| Wi-Fi | IEEE 802.11 B/G, 2.4 GHz |
| External interfaces that can be supported | Ethernet, Serial, CAN Bus, Modbus and USB 2.0 Via multi-pin connector |

MECHANICAL

| | |
|------------------|-------------------|
| Size (L x W x H) | 178 x 130 x 42 mm |
| Weight | < 900 g |

ENVIRONMENTAL

| | |
|------------------------|--|
| Solar Radiation | 1120 W/m ² p per IEC-60068-2-5 |
| Relative Humidity | Up to 100% condensing at 45 °C, per IEC 60068-2-30 |
| Ingress Protection | IP66 dust and spray proof in all directions |
| Wind Speeds | Up to 200 km/hr |
| Air Pressure Transport | 4500 m AMSL |

TEMPERATURE

| | |
|-------------|---------------|
| Operational | -40 to +71 °C |
| Transport | -40 to +85 °C |
| Storage | -40 to +85 °C |

VIBRATION

| | |
|-------------|--|
| Operational | Random vibration of 1.05 g rms in each of three mutually perpendicular axes 5 to 20 Hz vibration: 0.02 g ² /Hz 20 to 150 Hz vibration: -3 dB/octave |
| Survival | Transportation vibrate per IEC 60068-2-64 Frequency 5 to 200 Hz ASD 1.0 m/s ³ |

SHOCK

| | |
|-------------|---|
| Operational | IEC 60068-2-64, 50 m/s ² , 11 ms |
| Survival | Transportation shock per IEC 60068-2-29, A = 180 m/s ² , t = 6 mS |

CERTIFICATIONS

| | |
|-------|---|
| CE | Per R&TTE Directive 1999/5/EC, Low Voltage Directive 2006/95/EC |
| FCC | Title 47 Section 15, Title 47 Section 25 |
| RCM | AS/NZS CISPR 22:2009 Safety IEC/EN/AS/NZS 60950-1, IEC/EN/AS/NZS 60950-22 |
| RoHS | Per European Union Council Directive 2011/65/EU |
| REACH | Per European Union Council Directive 1907/2006/EC |
| WEEE | Per European Union Council Directive 2012/19/EU |



Examples of applications that can be supported

Pipeline Operations

- Perimeter monitoring and surveillance
- First responder rescue operations monitoring and support
- Track various assets in the field from command and control interface
- Emergency warning communications

Utilities

- Remote worker and field safety
- Asset tracking
- Maintenance and operations cost optimization
- Integration of field operations with back-office services
- Meter reading
- Water flowmeters
- Power recloser control

Oil and Gas

- Wellhead monitoring
- Cathodic protection
- Flowmeters

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