

# xFusion PBx-A1

The PBx-A1 is an advanced high-performance positioning and awareness system. Powered by Fixposition's proprietary algorithms, the PBx-A1 goes beyond pure GNSS to provide you with a complete solution so that you can navigate in any and all environments. With unparalleled reliability and availability.



Distributed Mono/Stereo Camera

The PBx-A1 is engineered to provide you with all your positioning needs even in the most challenging of environments. Powered by industry-leading technology, it delivers unmatched performance in a rugged and compact package.

The PBx-A1 is designed to be flexible and work with your system. Fakra connectors are available to connect the necessary cameras and GNSS antennas. The sensor supports RS-232, RS 422, CAN bus communications, as well as Gigabit Ethernet.

At the core of our offering is Fixposition's advanced technology suite, designed to provide unmatched performance, robustness, and reliability:

- > **xFusion:** Our industry leading fusion technology
- > **xRTK:** An advanced RTK solver embedded within xFusion
- > **xCruise:** High pass-to-pass accuracy is guaranteed
- > **xStart:** Instant global coordination before GNSS signals are even detected
- > **xTend:** Navigate indoors indefinitely using global coordinates
- > **xPlore:** Advanced AI to provide understanding and adapts to the world

## FEATURES

- ✗ Precise global positioning everywhere

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- ✗ Robust IP66 rated solution for harsh environments

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- ✗ Initialise in known locations without GNSS availability

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- ✗ Flexible solution for a variety of applications

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## FEATURES

GNSS supported bands	GPS/ QZSS: L1 C/A, L2C, L5 GLONASS: L1, L2 Galileo: E1 B/C, E5a, E6 BDS: B1I, B1C, B2a, B3I
Default GNSS constellations	GPS + GLONASS + Galileo + BDS + QZSS
Proprietary technologies	xFusion xRTK xCruise xStart xTend
Protocols	FP_B (Fixposition Binary output) FP_A (Fixposition ASCII output) NMEA 0183/NMEA 2000(output) J1939 - ISO 11783 (output) NOV_B (output) RTCM 3.x (input) Network: TCP/IP, UDP, NTP, PTP Compatible with: J1939, ISOBus, NMEA 2000, EtherCAT, CANopen
Interfaces	1 x 1Gbps Ethernet Xcode 2 x FAKRA GNSS 2 x FAKRA Camera GMSL2 1 x COMS: - 1 x RS232 - 1 x RS485 - 1 x CAN - 2 x PPS (GNSS 1 and 2) - 1 x UART - 6 x GPIO
External antenna interface	Antenna type: Active Antenna power supply: 5V

## PHYSICAL & ENVIRONMENTAL

Package	Dimensions 16cm x 11cm x 6cm Weight 450g
Electrical	Supply voltage 7.5V to 36V Power consumption 8W (typical) / 10W (max)
Environmental	IP 66 Temperature Operating -40°C to +85°C Storage -40°C to +90°C Humidity 95% non-condensing Vibration Random12 MIL-STD-810G (CH1) Method 514.7 (Cat 24, 20 g RMS) Sinusoidal IEC 60068-2-6
Compliance	RoHS compliant (lead-free, 2015/863/EU) Green (halogen-free) EU Radio Equipment Directive compliant 2014/53/EU Manufactured and fully tested in ISO/TS 16949 certified production sites Qualification according to ISO 16750 CE FCC WEEE UKCA

## PERFORMANCE

GNSS performance	Horizontal position accuracy (RMS) Single point L1: 1.5 m Single point L1/L5: 1.2 m SBAS*: 60cm RTK: 0.6 cm + 1 ppm Velocity accuracy 0.03 m/s Heading accuracy (RMS-dual antenna) 1 m baseline: 0.15° 2 m baseline: 0.08° 4 m baseline: 0.05° Time-to-first-fix (with AGNSS) Full Cold Start: 5 s Time-to-first-fix (without AGNSS) Full Cold Start: 26 s Warm Start: 16 s Hot Start: 1 s Sensitivity Acquisition: -145 dBm Tracking: -165 dBm Reacquisition: -157 dBm PPS signal accuracy 20 ns UDR < 1% of distance traveled without GNSS ADR Dead reckoning performance < 0.5% of distance traveled without GNSS HDR < 0.05% of distance travelled without GNSS
Maximum update rate	100 Hz

## COMPATIBLE SENSORS

Cameras	SW-SHW3G-GMSL2
External IMUs	TBD
Lidar	TBD

