



Integrated Localization
and Perception Solution



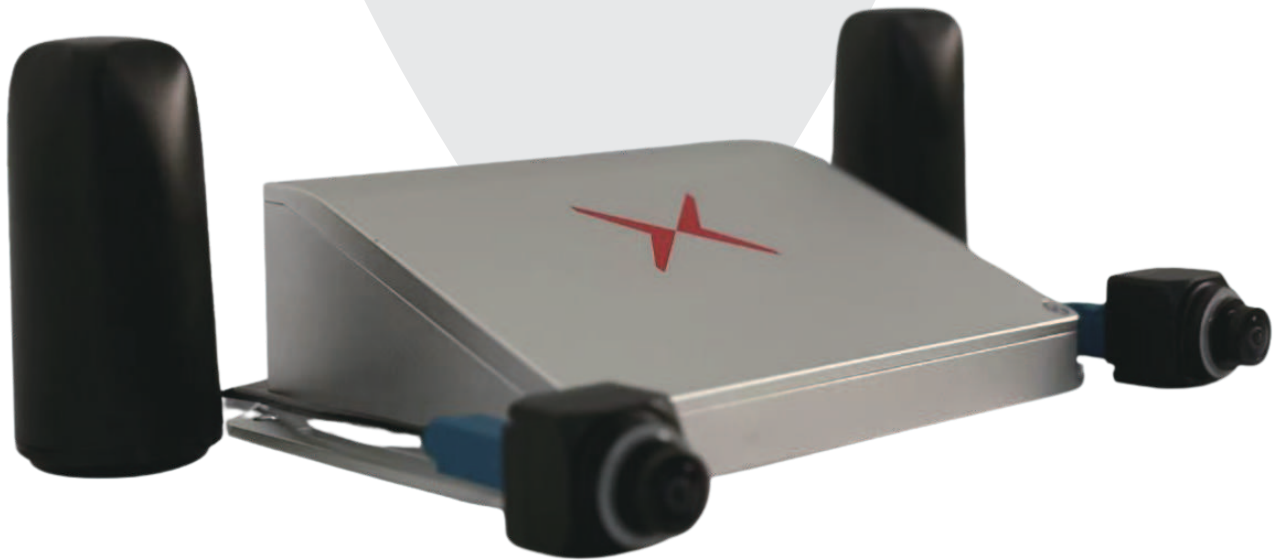
Distributed Camera Setup
with Dedicated AI Perception



RTK cm-level
Accuracy

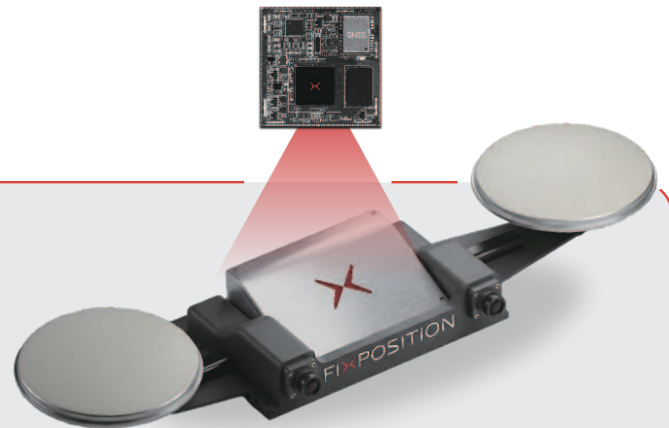
xFusionPBx-A1

Redefining Positioning with Next-Generation
Vision and GNSS/INS Fusion



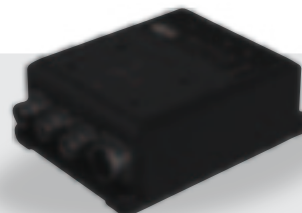
Fixposition Provide

- ✓ Outdoor accuracy: 0.5-1cm
- ✓ Outage accuracy: 0.3%-0.4%
- ✓ Up to 4 × 3MP GMSL2 camera data streams
- ✓ Depth images available upon request
- ✓ Optimized for LiDAR algorithms

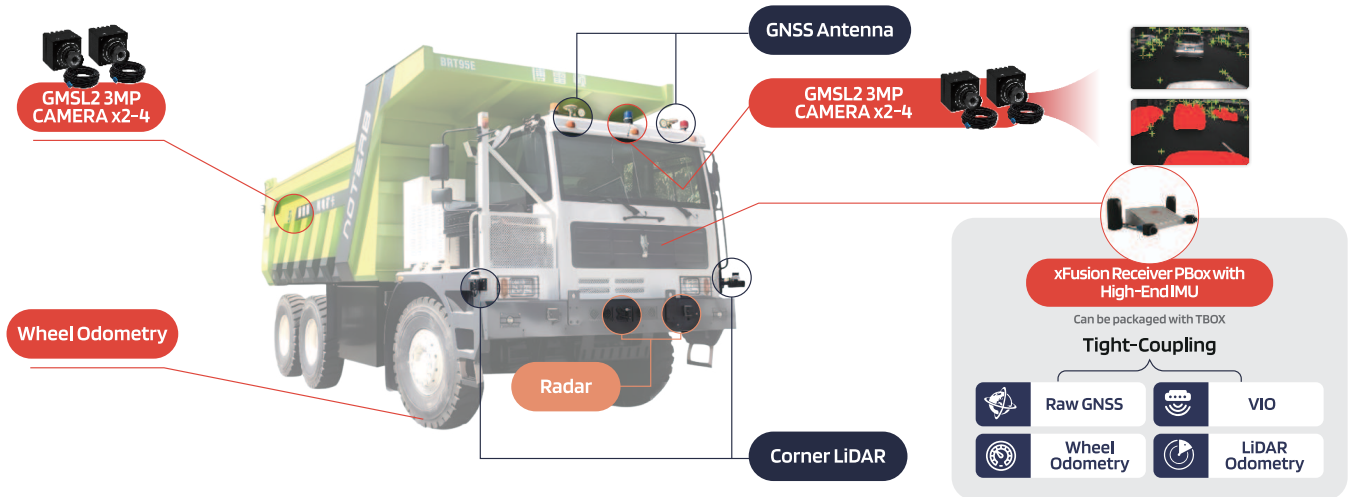


Typical GNSS/INS vendors provide

- ⊗ Outdoor accuracy: 1-5 cm, but impacted by multi-path in mining pits
- ⊗ Signal loss after ~20 minutes of outage
- ⊗ Low-noise IMU available only at higher cost



- Bulky hardware
- Limited integrity performance



IPBx-A1 Datasheet

CATEGORY	SPECIFICATION
Proprietary Technology	xFusion, xRTK, xCruise, xStart
Performance	xRTK - Horizontal position accuracy (RMS): 0.6cm + 1ppm - Velocity accuracy: 0.03m/s - Heading accuracy 4m baseline: 0.05° 1m baseline: 0.15° xFusion - UDR: < 0.75 % of distance travelled without GNSS - ADR: < 0.4% of distance travelled without GNSS - HDR: < 0.05% of distance travelled without GNSS
GNSS	Dual-Antenna RTK (Heading + Position) GPS + Galileo + BDS + GLONASS + QZSS Supported bands: - GPS/QZSS: L1 C/A, L2C, L5 - BDS: B1I, B1C, B2a, B3I - Galileo: E1 B/C, E5a, E6 - GLONASS: L1, L2
Inertial Sensor	Primary: High-Grade Industrial IMU - Bias Stability: 0.3°/h - Random Walk: - XY axis: 0.015 °/√h - Z axis: 0.025 °/√h Secondary: Automotive Grade IMU (SoM integrated)
Vision Interface	Ports: 2x or 4x Fakra (Variant Dependent) Protocol: GMSL2 Deserializers Launch Support: 3MP Global Shutter RGB (External)
RF Interface	2x Fakra (GNSS Antennas)
Compute	- High-performance SoM - Integrated NPU for Edge AI acceleration

CATEGORY	SPECIFICATION
Connectivity	Ethernet: 1x M12 (X-Coded) - 1GbE Coms: 2x M12 (A-Coded) supporting: - RS232/RS485/UART/CAN Bus 8x GPIO/2x PPS /2x 5V Output Power: 1x M12 (Input 9-36V DC)
Protocols	- FP_A (Fixposition ASCII output) - NMEA 0183 (output) - NOV_B (output) - RTCM 3.x(output) Network: TCP/IP, UDP, NTP, PTOP Compatible with: J1939, I2C, NMEA2000, EtherCAT, CANopen
Mechanical	Rugged Aluminium Enclosure, 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 Mounting: Flange mount points Dimensions: 16cm x 11cm x 6cm Weight: 450g
Compliance	- RoHS compliant (lead-free, 2015/863/EU) - Green (halogen-free) - EU Radio Equipment Directive compliant 2014/53/EU - Qualification according to ISO 16750 - Manufactured and fully tested in ISO/TS 16949 certified production sites - CE, WEEE, FCC, UKCA



Positioning Engine Portfolio

Centimeter-grade, all-environment localization — built on proprietary raw-data tight coupling of GNSS, vision and inertial sensing.

FIXPOSITION

01 xFusion™

Positioning that never drops out

Reliable, continuous positioning where conventional GNSS and SLAM lose the signal.



Decimeter accuracy through full GNSS blackouts
One unbroken track, no handover, no operator input.



Drift of just 0.5% of distance traveled
Bounded, and re-converging instantly the moment any gnss returns.



No pre-mapping, no site setup
Deploy anywhere and start the instant you power on, regardless of scene features.



Seamless indoor-to-outdoor
One unbroken track, no handover, no operator input.



Drops into your existing SLAM stack as a robust prior
Or replaces it outright in lightly obstructed outdoor scenes.



GNSS degrades near large structures

02 xRTK™

Fast, reliable centimeter fixes

Faster fixes and steadier accuracy through interruptions — an ideal building block for larger estimation pipelines.



Converges to a fixed solution fast
Seconds, not minutes, with a ~90% fixed-solution rate in open environments with light obstruction.



Holds centimeter accuracy through brief correction dropouts
Stays fixed for a sustained window where ordinary RTK falls back to float.



Proprietary tight coupling of raw GNSS inertial and visual data
Not an off-the-shelf chip output, so the fix survives conditions that break chip-based rtk.



A stable drift-free input
Strengthens any downstream estimator or SLAM you pair it with



Typical scenario: urban canyon

03 xStart™

Up and running in seconds, indoors

Power on indoors and operate immediately.



Cold-start to a valid pose in 6–8 seconds
Fully indoors, With no gnss.



Zero outdoor initialization
Never roll outside to get a fix.



Resumes exactly where it left off
Position, attitude and heading restored from stored state.



No calibration drive no warm-up
Operators just power on and start working.



Typical scenario: indoor warehouse

04 xCruise™

Repeat the same line, every time

Perfect line repetition — without the correction-service infrastructure.



No network RTK no subscription, no base station
Full performance with zero correction infrastructure.



5–10 cm pass-to-pass repeatability under open sky
Precise relative displacement, Point to point.



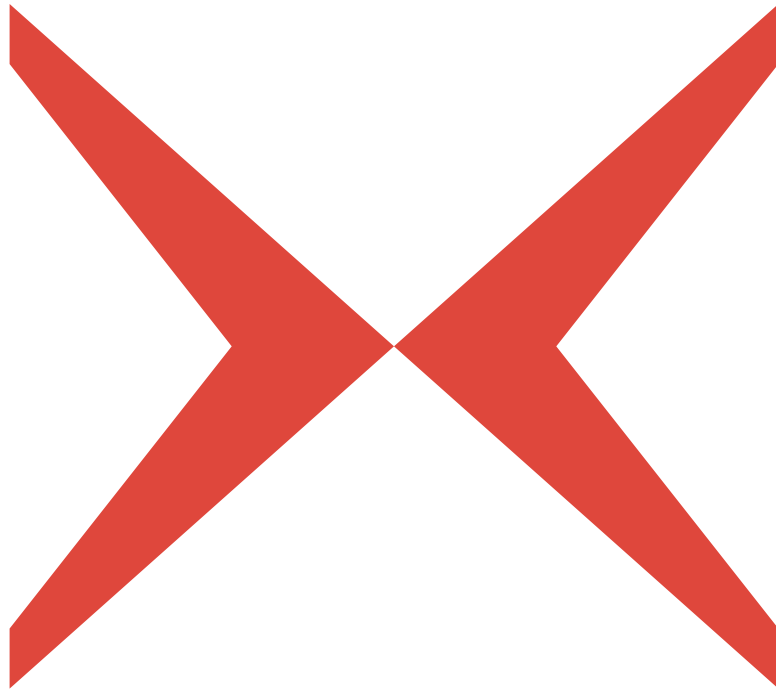
Built for back-and-forth (“弓”-pattern) coverage
Suitable for fixed route as well.



Ideal for tractors mowers and inspection robots
That retrace the same path.



Typical scenario: lawn mowing



Precise global positioning everywhere TM

