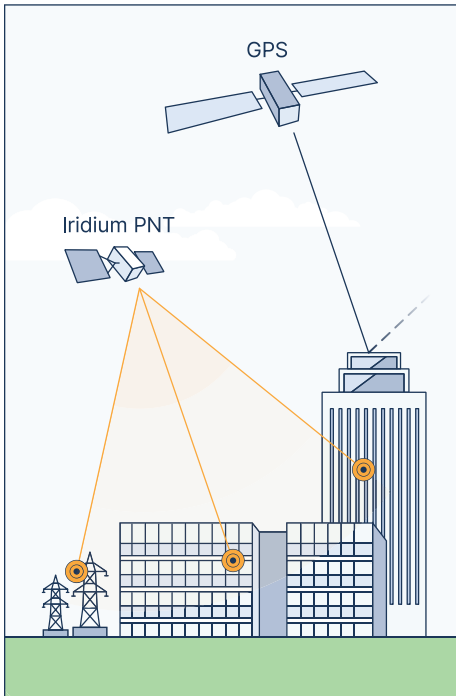
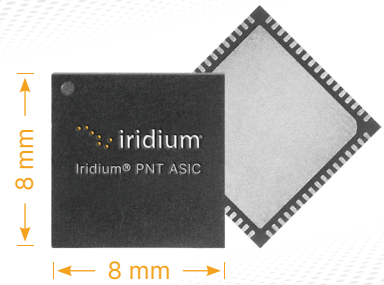


Iridium® PNT ASIC

Fact Sheet

The Iridium PNT ASIC will offer developers an easy-to-integrate, all-in-one chip optimized for Iridium's resilient positioning, navigation, and timing (PNT) capabilities.



Simplified Integration

- **8×8mm ASIC** designed to accommodate a range of form factors
- **Familiar interfaces** that resemble typical GPS/GNSS receivers for quick adoption
- **Built-in RF demodulator and power regulators** that cut complexity
- **Secure, on-chip firmware storage** that streamlines deployment

Iridium PNT: Inside, Outside, and Worldwide

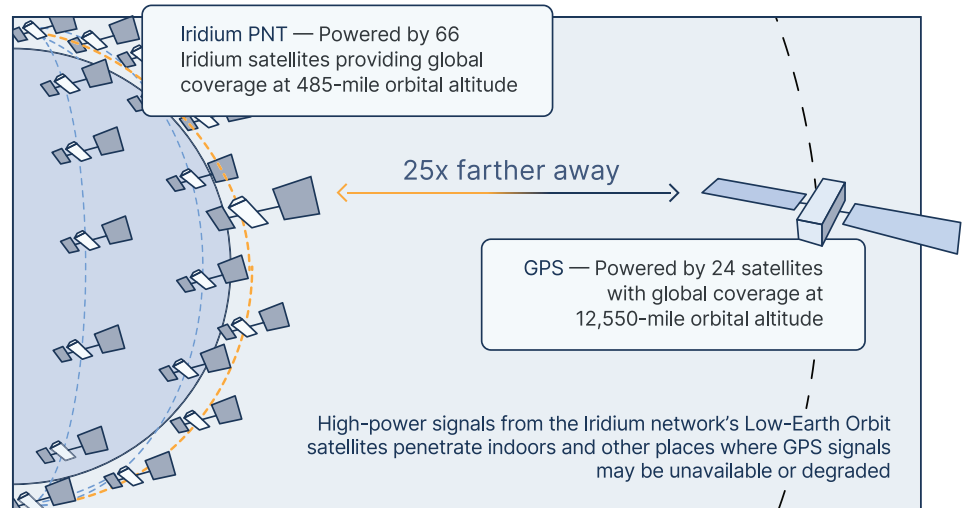
Iridium PNT is available today, powered by the first truly global low-Earth orbit (LEO) satellite constellation. Our signal reach lets partners focus on developing solutions suited to their users' needs.

When paired with Iridium-certified antennas, Iridium PNT ASIC offers:

- Deeper signal penetration indoors and into dense urban canyons
- Better resilience to interference—natural or deliberate
- Stronger security against jamming and spoofing threats

Host Requirements

- Design support for 68QFN footprint
- Reference oscillator satisfying requirements for stability (ADEV, phase noise) and frequency (10/26/40 MHz supported)
- Host/ASIC communication via NMEA protocol over a dedicated serial interface at 115200 baud
- Support for Iridium® network-capable antenna with compatible gain and noise specifications



PNT Service Timing Specifications ¹			
	Clock Stratum Level	Stratum 0 source	
		Supports Stratum 1 PTP Grandmaster Clock / Primary Reference Source (PRS)	
	Timing Stability (Meets ITU-T G.8272 PRTC-A performance specifications)	Less than 50 nanoseconds, 1-sigma with OCXO oscillator	
		Less than 25 nanoseconds, 1-sigma with rubidium oscillator	
	Timing Accuracy	Verified average time offset within 5 nanoseconds of UTC(NIST) over 60 days (source: U.S. NIST)	
UTC Traceability	Traceable to UTC(USNO), UTC(NIST), UTC(MIKES), and UTC(IT): continuously monitored via multiple independent geographically distributed tracking stations		
PNT Service Position Specifications ¹			
	Static-Location Accuracy (Stand-Alone Without GNSS) - given sufficient convergence time, location accuracy will be better than 30m	Horizontal ² : 10 meters, 1-sigma	
		Vertical ² : 10 meters, 1-sigma	
Mechanical			
	Dimensions	68 QFN 8 mm × 8 mm × 0.85 mm (LxWxH)	
Electrical Data			
		Core Power Option	
		Internal ³	External ⁴
	Supply voltage (VMAIN)	3.135 V - 3.465 V (3.3 V Typ)	
	Digital I/O voltage (VDD_IO)	1.71 V - 1.89 V (1.8 V Typ)	
	Core voltage (VDD_P8V)	N/A	0.776 V - 0.824 V (3% Tolerance)
Power Consumption	VMAIN	320 mA	120 mA
	VDD_IO	10 mA	
	VDD_P8V	N/A	625 mA
	Total Power	1.07 W	0.91 W
Interfaces			
Peripheral	SPI	1	
	I2C	up to 3	
	UART	up to 3	
	GPIO ⁵	up to 17	
Communication	Custom NMEA sentences used for communication and configuration		
Digital I/O	2 configurable 1PPS inputs		
	2 configurable 1PPS outputs ⁶		
	Configurable clock port, locked to either a reference clock input or 1PPS output		
Reference Clock Input	Reference clock (TCXO, OCXO, Rb) input frequency: 40, 26, or 10 MHz (Clipped Sine Wave, 50 Ω)		
RF			
Antenna	Antenna type	Iridium capable	
	Frequency range	1616-1626.5 MHz	
	RF input impedance	50Ω	
Connectivity			
	Network Type	Low-Earth Orbit (LEO), L-band	
	Satellite Service	Iridium PNT	
Environmental			
	Operating temperature	-20°C to 70°C	
	Storage temperature	-55°C to 150°C	
	Junction temperature	-40°C to 110°C	
	Soldering temperature (max)	260°C	

¹Internally tested specification. Information should be considered “as-is” and Iridium assumes no liability for its use. No warranty, either express or implied, is given, including but not limited to, with respect to accuracy, correctness, reliability, and qualifications in determining performance.

²Static position, outdoor antenna.

³Internal core power option utilizing on-chip DC/DC converter, supports 1 detector.

⁴Utilizing 0.8 V external core power supply option, bypassing on-chip DC/DC converter.

⁵Multiplexed interface pins limit availability.

⁶Automatically tracks the highest priority source satisfying configured performance thresholds, either PNT signal source or external 1PPS input, e.g. from GPS/GNSS.

Learn More

For general questions and hardware details, please contact us at pnt@iridium.com.