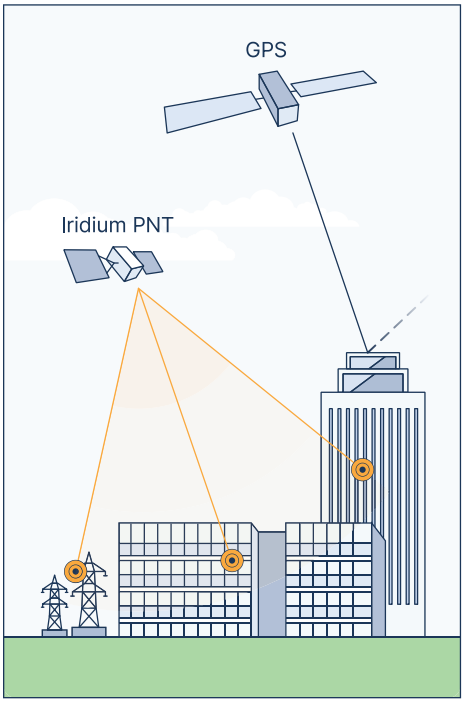
Iridium® PNT ASIC *Coming Soon*

Preliminary 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 and power regulators** that cut complexity
- **Secure, on-chip firmware storage** that streamlines deployment

Versatility

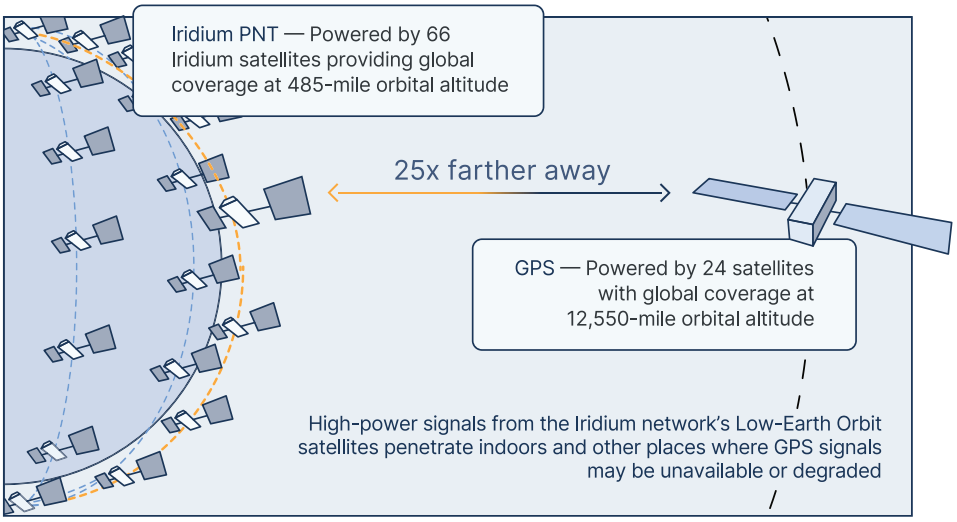
- **Flexible configurations** to create a standalone Iridium PNT receiver or hybrid Iridium + GNSS solution
- **Two independently configurable PPS outputs** that support a range of end products

Iridium PNT: Inside, Outside, and Worldwide

The Iridium PNT technology is available today worldwide. Iridium PNT eliminates the need to integrate multiple alternative PNT sources into product hardware. Iridium's signal reach lets partners focus on developing the right solution for the right application.

Iridium PNT ASIC, built using our existing technology, will pair with Iridium-certified antennas to offer:

- Deeper signal penetration indoors and into dense urban canyons
- Better resilience to interference—natural or deliberate
- Greater accuracy and reliability
- 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

* Please note that the information in this document is subject to change. Iridium strives to provide our partners and customers with the most up-to-date information on product and service developments. We are committed to timely publishing updated versions of this document as we finalize the release of Iridium PNT ASIC.

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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), and UTC(IT); continuously monitored via multiple independent geographically distributed tracking stations	
PNT Service Position Specifications[1]			
	Static-Location Accuracy (Stand-Alone Without GNSS)	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 (Sine, 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 150°C	
	Soldering temperature (max)	260°C	

[1] Internally 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.
[2] Static position, outdoor antenna.
[3] Internal core power option utilizing on-chip DC/DC converter, supports 1 detector.
[4] Utilizing 0.8 V external core power supply option, bypassing on-chip DC/DC converter.
[5] Multiplexed interface pins limit availability.
[6] Automatically 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.

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