


iSource+® Products

We offer a variety of smart Rubidium (Rb) oscillator packages in different form factors, performance levels and price ranges, as well as a low-noise, high-frequency and ruggedized Crystal (OCXO) oscillator for defense and avionics applications. The Rb oscillator sources are used in commercial, defense and avionics applications.

PRODUCTS	TECH	STABILITY	KEY FEATURES	RoHS (a)
 LCR-900	Rb	<3E-10 (0° to 65°C) 5E-11/mth	• Low cost • PCB mountable • DOCXO alternative	
 LPFRS	Rb	<+/-1E-10 (-30° to 70°C) <3E-11/mth	• Low phase noise (-80 dBc/Hz @ 1Hz) • SMA dual output • FEI 5650 compatible	
 StarLPRO	Rb	<2E-10 (0° to 60°C) <3E-11/mth	• Low cost • Fast warm-up • Symm LPRO compatible	
 RMO	Rb	<+/-1E-10 (-20° to 60°C)	• PCB mountable • Output options • DOCXO alternative	
DEFENSE & AVIONICS				
 LPFRS/AV1	Rb	<+/-1E-10 (-30° to 70°C) <3E-11/mth	• Low phase noise (-80 dBc/Hz @ 1Hz) • Ruggedized • High reliability	
 LNMO/AV	OCXO	<+/-1E-10 (-30° to 70°C) <+/-5E-7/yr	• Low phase noise (-110 dBc/Hz @ 1 Hz) • High frequency (<140 MHz) • Ruggedized	



(a) RoHS compliant products.












iSpace+™ Products

We offer high-reliability, lightweight Crystal, Rb and Passive Maser oscillators for space applications, requiring stringent design requirements. Through our long heritage of supplying Swiss-quality oscillators, our products are flying on multiple GNSS programs, including Galileo, IRNSS and COMPASS, as well as other space applications.

PRODUCTS	TECH	STABILITY	KEY FEATURES	WEIGHT
 MO	OCXO	<+/-1E-9 (-15° to 60°C) <+/-1E-10/day	• ESA/MEO/GEO programs • Low phase noise (-100 dBc/Hz @ 1Hz) • High reliability	220g
 LNMO	OCXO	<+/-1E-9 (-30° to 70°C) <+/-1E-10/day	• ESA program • Low phase noise (-110 dBc/Hz @ 1 Hz) • High reliability	100g
 LNMO/VHF	OCXO	<+/-5E-8 (-30° to 70°C) <+/-5E-9/day	• ESA program • Low phase noise (-100 dBc/Hz @ 10 Hz) • High frequency (150MHz)	100g
 RAFS	Rb	<+/-5E-14/°C (-10° to 15°C) <2E-10/yr	• ESA qualified • Low phase noise (-90 dBc/Hz @ 1Hz) • High reliability	3.4Kg
 Maser	Passive Maser	<+/-1E-15/°C (-10° to 15°C) <1E-15/day	• OEM physics package • High performance • High reliability	12Kg

iSync+® Products

We offer smart, low-cost and advanced GPS/GNSS-disciplined or -integrated rubidium and crystal SynClock+® oscillators and designer kits for commercial and military applications. Our products meet complex time, frequency and synchronization requirements in a single, compact package.

PRODUCTS	TECH (b)	STABILITY	KEY FEATURES	RoHS (a)
 SRO-100	• GPS sync • Rb	<1E-10 (-30° to 65°C) <3E-11/mth	• Slim 1" height • Smart GPS/GNSS sync	
 LNRClok-1500	• GPS • Rb • OCXO	<+/-1E-10 (-32° to 65°C) <3E-11/mth (c)	• Low phase noise (-103 dBc/Hz @ 1Hz) • Integrated GPS/GNSS receiver • Fits within 1U chassis	
 GRCllok-1500	• GPS • Rb	+/- 1E-10 (-32° to 60°C) <3E-11/mth (c)	• Low cost • Integrated GPS/GNSS receiver • Fits within 1U chassis	
 GXCllok-500	• GPS • OCXO	<=6E-9 (-10° to 70°C) <+/-3E-10/day (c)	• Low cost • Phase noise (-95 dBc/Hz @ 1 Hz) • Integrated GPS/GNSS receiver	
 GDK-2	• GPS • Rb	See SRO spec	• Designer kit for the SRO model	
 EK-5	• GPS • Rb/OCXO	See LNRClok, GRCllok spec	• Designer kit for the LNRClok, GRCllok or GXCllok model	
DEFENSE & AVIONICS				
 SRO-5680	• GPS sync • Rb	<+/-5E-11 (-10° to 60°C) <5E-11/mth (c)	• Slim 1" height • EMI shielded • Smart GPS/GNSS sync	










(b) Products use the patented SmartTiming+® technology, disciplining the GPS/GNSS reference and rubidium or crystal oscillator at 1ns resolution for leading-edge holdover performance.

(c) Aging drift when the product is unlocked to a GPS/GNSS reference. If locked to an external or integrated GPS/GNSS reference, the stability is 1E-12.

iReference+® Products





Using the smart iSync+® products, we offer low-cost, low-noise primary reference standards or systems, either GPS/GNSS rubidium and crystal or standalone rubidium, in a compact, 19" 1U package for commercial and military applications. We also offer smart active maser clock standards.

PRODUCTS	TECH (b)	STABILITY	KEY FEATURES	RoHS (a)
 GPSReference-2000	• GPS • Rb	1E-12 (d) (0° to 40°C)	• Low cost • 19" 1U rack system • Integrated GPS/GNSS receiver	
 GNSSource™-2500	• GPS • Rb • OCXO	1E-12 (d) (0° to 40°C)	• 19" 1U rack system • Integrated GPS/GNSS receiver • Phase noise (-100 dBc/Hz @ 1 Hz)	
 RBSource™-1500	• GPS sync • Rb	<3E-11/mth (c) (0° to 40°C)	• Low cost • 19" 1U rack system • Smart GPS/GNSS sync	
 iMaser 3000	Active Maser (f)	8E-14 @ 1s (10° to 35°C) 2E-16/day	IP remote control Thermal sensitivity (<8E-16/°C) Phase noise (-130 dBc/Hz @ 1 Hz)	

(d) If the product is locked to an external or integrated GPS/GNSS reference.
(f) A product from T4Science

iTest+® Products

We offer smart, low-cost, advanced and high-resolution phase and frequency stability or synthesizing instruments for commercial and military applications, meeting complex test and measurement requirements in a compact, 19" 1U package. They use leading-edge technology, enabling test performance up to 100fs in resolution.

PRODUCTS	TECH (b)	STABILITY	KEY FEATURES	RoHS (a)
 PicoTime-1U	• Comparator (e) • GPS sync	1E-12 (d) (15° to 30°C)	• 19" 1U rack system • 1ps resolution • 1-30 MHz DUT • 10 MHz IN reference	
 GPS PicoReference	• Comparator (e) • GPS • Rb (b)	1E-12 (d) (0° to 40°C)	• 19" 1U rack system • 1ps resolution • Integrated PicoTime-1U • Integrated GPS receiver & Rb	
 FemtoStepper	• Synthesizer • GPS/Maser sync	1E-12 (d) (20° to 30°C)	• 100fs phase resolution • 1E-17 frequency resolution • Clock ensembling & drift modeling • Automatic drift compensation	

(e) Time & frequency stability deviation comparator.

Product Applications



Telecom

Network clocks
GPS references
NTP/PTP clocks
Wireless/IP sync
Portable sources
Lab test sources



Defense

Communications
IP networks
GPS guidance
Radio networks
Ground terminals
Battlefield calibration
Radar systems
Lab test sources



Navigation

GPS references
Positioning
Guidance
Ground stations
Weather systems
Pseudolite
Satellite clocks
Smart jamming



Broadcasting

IP HDTV networks
IP radio networks
GPS references
Portable sources
DVB
ISDB-T & SBTVD
ATSC



Instrumentation

Reference clocks
GPS references
GPS simulators
IP/PTP testing
Lab test sources
Timing testing
Calibration clocks



Space

Exploration
Communications
Satellite sources
Navigation systems
GPS/GNSS
Galileo
COMPASS
IRNSS
GLONASS