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	✓
GRClok-1500 	• GPS • Rb	+- 1E-10 (-32° to 60°C) <3E-11/mth (c)	• Low cost • Integrated GPS/ GNSS receiver • Fits within 1U chassis	✓
GXClok-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, GRClok spec	• Designer kit for the LNRClok, GRClok or GXClok 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 SmarTiming+® 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