



# ULS520

## Features

- PLL LOOP Bandwidth as low as  $\leq 50\text{mHz}$
- Better short-term stability, up to  $5.0E-13/1s$
- Ultra low phase noise  $\leq -175\text{dBc/Hz}@10\text{kHz}$

## Applications

- Frequency standards and sources
- Measuring and calibration equipment
- Navigation

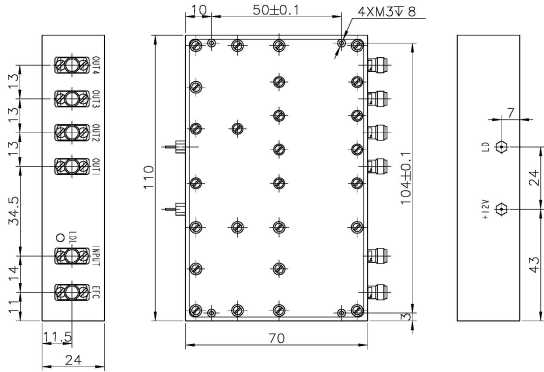
## Technical Specifications

Standard Frequency	10 MHz	100 MHz	10 MHz	100 MHz	10 MHz	100 MHz	10 MHz	100 MHz
<b>Short-term stability</b>	$\leq 5 \times 10^{-12}/1s$		$\leq 3 \times 10^{-12}/1s$		$\leq 1.5 \times 10^{-12}/1s$		$\leq 8 \times 10^{-13}/1s$	
<b>Phase Noise</b> ( dBc/Hz, free-running)	<b>Option: S</b>		<b>Option: H</b>		<b>Option: L</b>		<b>Option: U</b>	
1 Hz	-100	-80	-105	-85	-110	-90	-115	-95
10 Hz	-125	-100	-130	-105	-135	-110	-140	-115
100 Hz	-150	-130	-150	-133	-155	-135	-155	-138
1 KHz	-158	-160	-158	-163	-158	-165	-158	-168
10 KHz	-160	-171	-160	-172	-160	-173	-160	-175
100 KHz	-160	-173	-160	-173	-160	-175	-160	-175
<b>Aging</b> (after 30 days of continuous operation)	$\leq 1 \times 10^{-7} / \text{year}$							
<b>Input voltage range</b>	12 VDC $\pm$ 5%							
Power consumption (at 25°C)	8W / 5W							
Warm up time (at 25°C to $2 \times 10^{-7}$ )	$\leq 5$ min							
<b>Input External Reference</b>								
Frequency range	10MHz $\pm$ 2Hz							
Power	10 $\pm$ 3 dBm							
PLL LOOP Bandwidth	50mHz ~ 10Hz							
<b>Input EFC</b>								
Tuning range	$\geq \pm 2 \times 10^{-7}$ (0 ~ 10 V, Positive)							
<b>Output specifications</b>								
Wave form	Sine wave							
Number of outputs	4							
Port to port isolation (Same frequency)	$\geq 50$ dB							
Power	10 $\pm$ 3 dBm							
Harmonics	$\leq -30$ dBc							
Spurious	$\leq -100$ dBc							
Frequency stability vs Temperature (-40°C to 70°C)	$\leq 2 \times 10^{-8}$							
Load	50 $\Omega$ $\pm$ 5%							
g sensitivity	$\leq 5 \times 10^{-10} / g$							



Vibration	MIL-STD-202G
Size (L×W×H)	110×70×24mm <sup>3</sup>

**Outline drawing and Electrical connections (mm)**



EFC: Electronic Frequency Control (SMA-F)  
 INPUT: 10MHz (SMA-F)  
 OUTPUT1: 10MHz (SMA-F)  
 OUTPUT2: 10MHz (SMA-F)  
 OUTPUT3: 100MHz (SMA-F)  
 OUTPUT4: 100MHz (SMA-F)  
 +12V: +12V Power supply  
 LD: TTL Level:L- lock,H-unlock  
 LDL: LD Lamp

