# ULS516

## Features

- PLL LOOP Bandwidth as low as ***≤50mHz***
- Better short-term stability,up to***5.0E-13/1s***
- Ultra low phase noise***≤-175dBc/Hz@10kHz***

## Applications

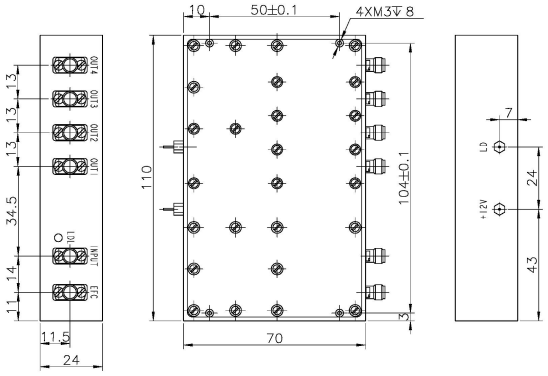
- Frequency standards and sources
- Measuring and calibration equipment
- Navigation

## Technical Specifications

| **Standard Frequency** | 10 MHz | 60 MHz | 10 MHz | 60 MHz | 10 MHz | 60 MHz | 10 MHz | 60 MHz |
|---|---|---|---|---|---|---|---|---|
| **Short-term stability** | ≤ $5\times10^{-12}$/1s | | ≤$3\times10^{-12}$/1s | | ≤$1.5\times10^{-12}$/1s | | ≤ $8\times10^{-13}$/1s | |
| **Phase Noise** ( dBc/Hz,free-running) | **Option: S** | | **Option: H** | | **Option: L** | | **Option: U** | |
| 1 Hz | -100 | -84 | -105 | -89 | -110 | -94 | -115 | -99 |
| 10 Hz | -125 | -105 | -130 | -110 | -135 | -115 | -140 | -120 |
| 100 Hz | -150 | -130 | -150 | -135 | -155 | -140 | -155 | -143 |
| 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 | -176 |
| **Aging** (after 30 days of continuous operation) | ≤ $1\times10^{-7}$ / year | | | | | | | |
| **Input voltage range** | 12 VDC ± 5% | | | | | | | |
| Power consumption (at 25℃) | 8W / 5W | | | | | | | |
| Warm up time (at 25℃ to $2\times10^{-7}$) | ≤ 5 min | | | | | | | |
| **Input External Reference** | | | | | | | | |
| Frequency range | 10MHz ±2Hz | | | | | | | |
| Power | 10 ±3 dBm | | | | | | | |
| PLL LOOP Bandwidth | 50mHz ~10Hz | | | | | | | |
| **Input EFC** | | | | | | | | |
| Tuning range | ≥±$2\times10^{-7}$（0 ~ 10 V，Positive） | | | | | | | |
| **Output specifications** | | | | | | | | |
| Wave form | Sine wave | | | | | | | |
| Number of outputs | 4 | | | | | | | |
| Port to port isolation（Same frequency） | ≥ 50 dB | | | | | | | |
| Power | 10 ± 3 dBm | | | | | | | |
| Harmonics | ≤ -30 dBc | | | | | | | |
| Spurious | ≤ -100 dBc | | | | | | | |
| Frequency stability vs Temperature (-40℃ to 70℃) | ≤ $2\times10^{-8}$ | | | | | | | |
| Load | 50 Ω ± 5% | | | | | | | |
| g sensitivity | ≤ $5\times10^{-10}$ / g | | | | | | | |

| | |
|---|---|
| Vibration | MIL-STD-202G |
| **Size** (L×W×H) | 110×70×24mm$^3$ |

## Outline drawing and Electrical connections (mm)




EFC：Electronic Frequency Control（SMA-F）
INPUT：10MHz（SMA-F）
OUTPUT1：10MHz（SMA-F）
OUTPUT2：10MHz（SMA-F）
OUTPUT3：60MHz（SMA-F）
OUTPUT4：60MHz（SMA-F）
+12V：+12V Power supply
LD：TTL Level:L- lock,H-unlock
LDL：LD Lamp