

Phase-Locked Ultra Low Phase Noise Multioutput Frequency Reference in 19" Rack Mountable Appliance 1U Form Factor



482.6 x 165 x 44.1 mm
Datasheet #2030B

Features

- Locks to 1 PPS or 10 MHz inputs
- Ultra-Low Phase Noise (ULPN)
- 10 MHz, 100 MHz, and 1 PPS Outputs
- 10 MHz and 100 MHz internal SC-cut OCXO
- PPS OUT Edge Aligned with 100 MHz Output

Applications

- Radar
- 5G device testing
- Instrumentation, Test and Measurement
- Mixed Signal System Reference
- COTS/Dual use

Absolute Maximum Ratings

Parameters	Symbol	Condition	Min	Typ	Max	Unit	Notes
Power supply	Vp		90		260	V AC	
Operating Temp.	To		10		45	°C	
Storage temper.	Ts		0		70	°C	

Electrical

Parameters	Symbol	Condition	Min	Typ	Max	Unit	Notes
	Fpps	1 PPS input		1		Hz	
1PPS in	1 PPS	TTL		2.5		V pk-pk	Green LED
		Pulse Width		1		us	
		Load		50		Ohm	
Frequency Capture Range (APR)	$\Delta F/F$	Over All	± 100			ppb	Includes variation vs. temperature, load, aging 10 years
Allan Deviation		.01s to 1s		1E-12			
Frequency stability	$\Delta F/F$	Locked Holdover	Equal to incoming signal ± 5			ppb	Over temperature
Holdover	τ	8 hours		20		us	
Recommended MAX Input SSB Phase Noise	$\xi(\Delta f)$	10 Hz			-90	dBc/Hz	10 MHz reference
		100 Hz			-120		
		1 KHz			-130		
		10 KHz			-140		
		100 KHz			-140		
Output SSB Phase Noise Improvement Compared to Input Phase Noise adjusted to 10 MHz	$\xi(\Delta f)$	10 Hz		40		dBc/Hz	Cannot improve beyond listed below Output Phase Noise
		100 Hz		50			
		1 KHz		50			
		10 KHz		50			
		100 KHz		50			
Output Frequencies	F10			10.000		MHz	SMA
	F100			100.00			SMA
	PPS			1			Hz

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Electrical (cont.)

Parameters	Symbol	Condition	Min	Typ	Max	Unit	Notes	
Misalignment rising edge PPS with rising edge 100 MHz					2	ns		
SSB Phase Noise (achieved after 10 minutes warm-up) Noise floor	£(Δf)	1 Hz		-115		dBc/Hz	10 MHz output	
		10 Hz		-145				
		100 Hz		-157				
		1 KHz		-162				
		10 KHz		-170				
		100 KHz		-172				
		10 Hz		-125			100 MHz output	
		100 Hz		-132				
		1 KHz		-163				
		10 KHz		-177				
		100 KHz		-180				
Output	F100			100.00		MHz	SMA	
	F10			10.000				
	1 PPS		Buffered internally					
Power Requirements	P	IEC320 on the back	100 to 250 V AC 50/60 Hz Consumption 20 Watts			V AC		
Output Waveform		Sinewave						RF output
Output Power			+13	+15		dBm	100 MHz	
			+12	+14			10 MHz	
Spectral Purity		Subharmonics Spurious Harmonics		-70 -35	-50 -80 -30	dBc	10 MHz and multiples on 100 MHz Output	
Load	Internally AC coupled 50 Ohm (Sinewave)						RF output	
Warm-up time	τ	to lock on 100 ppb input		3	5	minutes		
Lock Time after warm-up					20	minutes		
Lock Detect			Green LED					
Holdover Mode			Green LED					

Environmental and Mechanical

Parameter	Description
Operating temp. range	+10 °C to +45°C
Storage Temp. Range	0°C to +70°C

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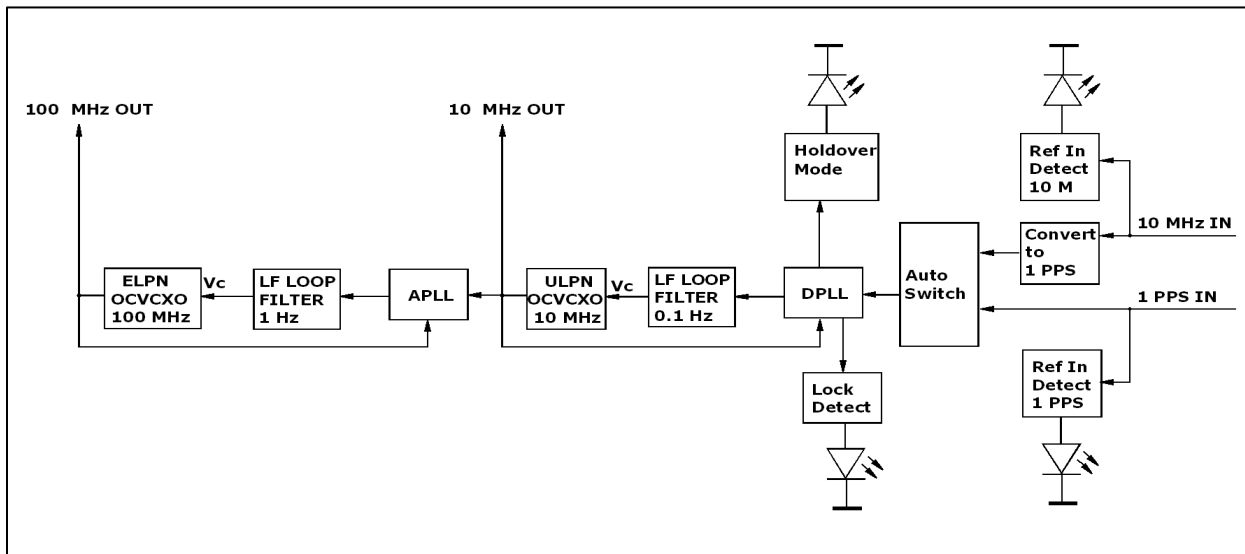
482.6 x 165 x 44.1 mm
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Inputs

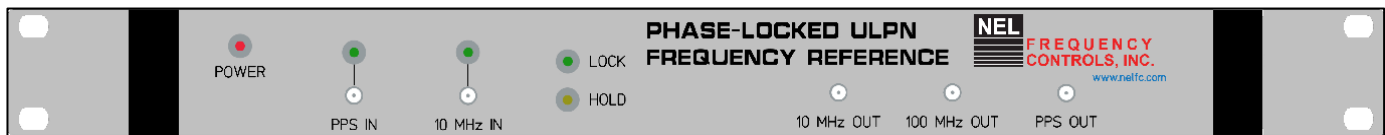
1 PPS IN on SMA Female
10 MHz on SMA Female

Outputs

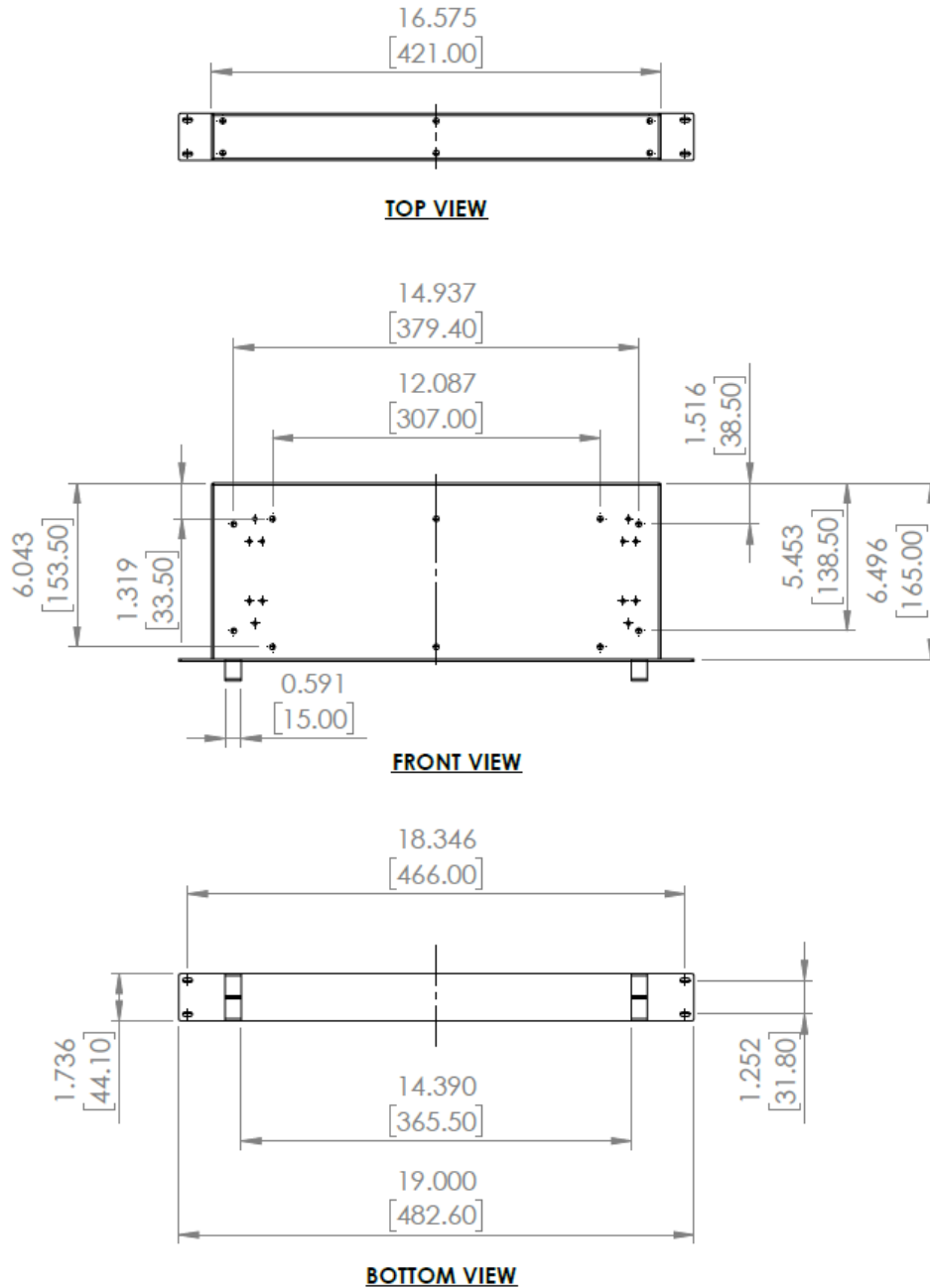
100 MHz OUT SMA Female
10 MHz OUT SMA Female
1 PPS OUT SMA Female



Front Panel



Mechanical Dimensions



Dimensions: inches [mm]

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Phase Noise Plot

