

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



482.6 x 165 x 44.1 mm
Datasheet #1950A

Features

- Ultra-Low Phase Noise (ULPN)
- 10 MHz, 100MHz, 300MHz, and 1.2GHz Outputs
- 10MHz and 100MHz internal SC-cut OCXOs

Applications

- 5G device testing
- Radar
- 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
Frequency Stability	$\Delta F/F$	vs. Temp.	From ± 2.0			ppb	See chart below
		vs. Supply		0.1	0.2	ppb/5%Vcc	
		vs. Load			0.5	ppb/5% load var.	
Aging		per day per year, first year second year 10 years		2E-10 2E-8 1E-8 1E-7			after 30 days
Initial Calibration				± 50		ppb	
Trim Range				± 0.2		ppm	
Allan Deviation		0.1s 1s 10s 100s		2E-13 4E-13 2E-12 5E-12	3E-13 5E-13 4E-12 7E-12		Static and benign conditions
Output Frequencies	F10			10.000		MHz	SMA
	F100			100.00			SMA
	F300			300.00			SMA
	F1200			1200.0			SMA
SSB Phase Noise (achieved after 10 minutes warm-up)	$\xi(\Delta f)$	0.01Hz		-46		dBc/Hz	10 MHz output
		0.1Hz		-89			
		1Hz		-120			
		10Hz		-150			
		100Hz		-162			
		1KHz		-165			
		10KHz		-168			
100KHz		-170					

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 ESD Sensitive 482.6 x 165 x 44.1 mm
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Electrical (cont.)

Parameters	Symbol	Condition	Min	Typ	Max	Unit	Notes		
SSB Phase Noise (achieved after 10 minutes warm-up)	£(Δf)	0.01Hz		-4		dBc/Hz	1,200 MHz output		
		0.1Hz		-47					
		1Hz		-78					
		10Hz		-106					
		100Hz		-108					
		1KHz		-140					
		10KHz		-154					
		>100KHz		-155					
		10Hz		-120				dBc/Hz	100 MHz output
		100Hz		-130					
		1KHz		-160					
		10KHz		-175					
		10Hz		-108		dBc/Hz	300 MHz output		
		100Hz		-118					
		1KHz		-148					
		10KHz		-163					
		100KHz		-168					
Power Requirements	P	IEC320 on the back	100 to 250 V AC 50/60 Hz			V AC			
Spectral Purity		Subharmonics		-50	-40	dBc	@ 0.1, 0.3, 1.2 outputs GHz Either output		
		Spurious			-80				
		Harmonics		-35	-30				
Output Waveform		Sinewave							
Output Power			+10	+13		dBm	All Outputs		
Load		Internally AC coupled 50Ohm (Sinewave) 10KOhm//15pf (CMOS/TTL)							
Warm-up time	τ	to 0.1ppm accuracy		5	8	minutes			

Environmental and Mechanical

Parameter	Description
Operating temp. range	+10°C to +45°C

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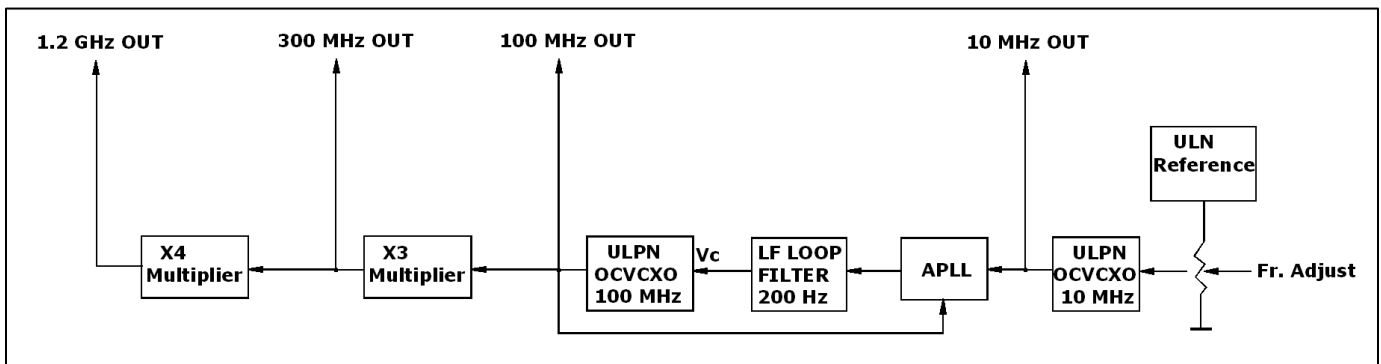
482.6 x 165 x 44.1 mm
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Frequency Adjustment

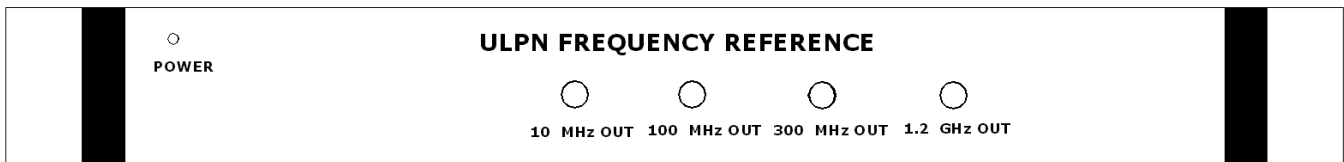
Mechanical

Outputs on Back Panel

- 10 MHz OUT SMA Female
- 100 MHz OUT SMA Female
- 300 MHz OUT SMA Female
- 1.2 GHz OUT SMA Female



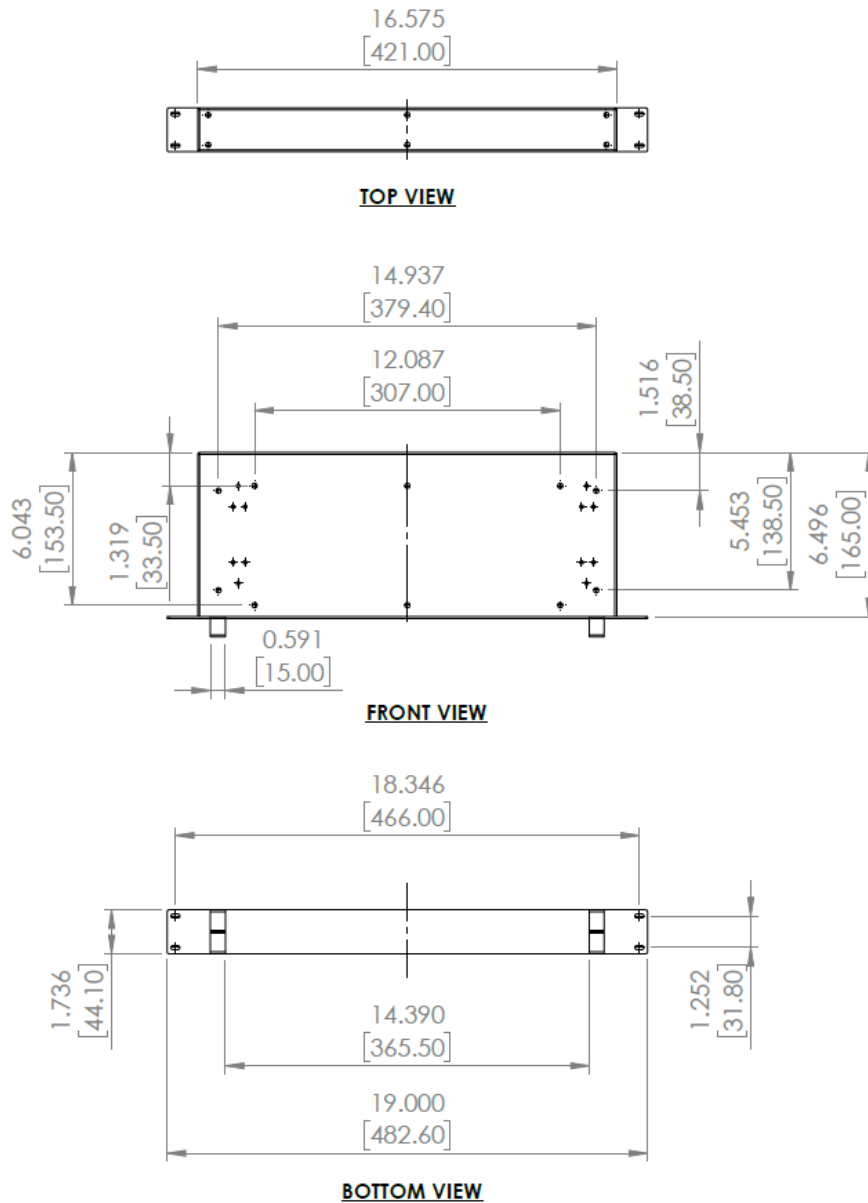
Front Panel



Back Panel



Mechanical Dimensions



Dimensions: inches [mm]