

### Descriptions

Polaris' Microwave Frequency Synthesizers (PMFS synthesizers) operate in the frequency range from 3.4 GHz to 35 GHz and are categorized into fixed frequency synthesizers (PMFS-F synthesizers), variable frequency synthesizers (PMFS-V synthesizers), and high power synthesizers (PMFS-P synthesizers). The PMFS synthesizers employ a fractional-N PLL architecture to provide fine frequency resolution with excellent spurious and phase noise performance.



The PMFS-P synthesizers are a high power fixed frequency synthesizers that output RF power up to 20 dBm.

### Features

- Very wide output frequency range from 3.4 GHz to 35 GHz
- Microwave fractional-N PLL synthesizer with low noise floor
- High output power up to 20 dBm
- Easily customizable to any fixed frequency upon request
- Fine frequency step size
- Low reference spurious
- Phase lock indicator alarm
- Single supply voltage
- Small size

### Applications

- VSAT/Satellite Communication Systems
- Test Equipment
- Microwave Transmitters & Receivers
- Cable TV Links (CATV)
- LMDS
- Local Area Networks (LAN)
- Point to point and point to multipoint microwave links

## Specifications

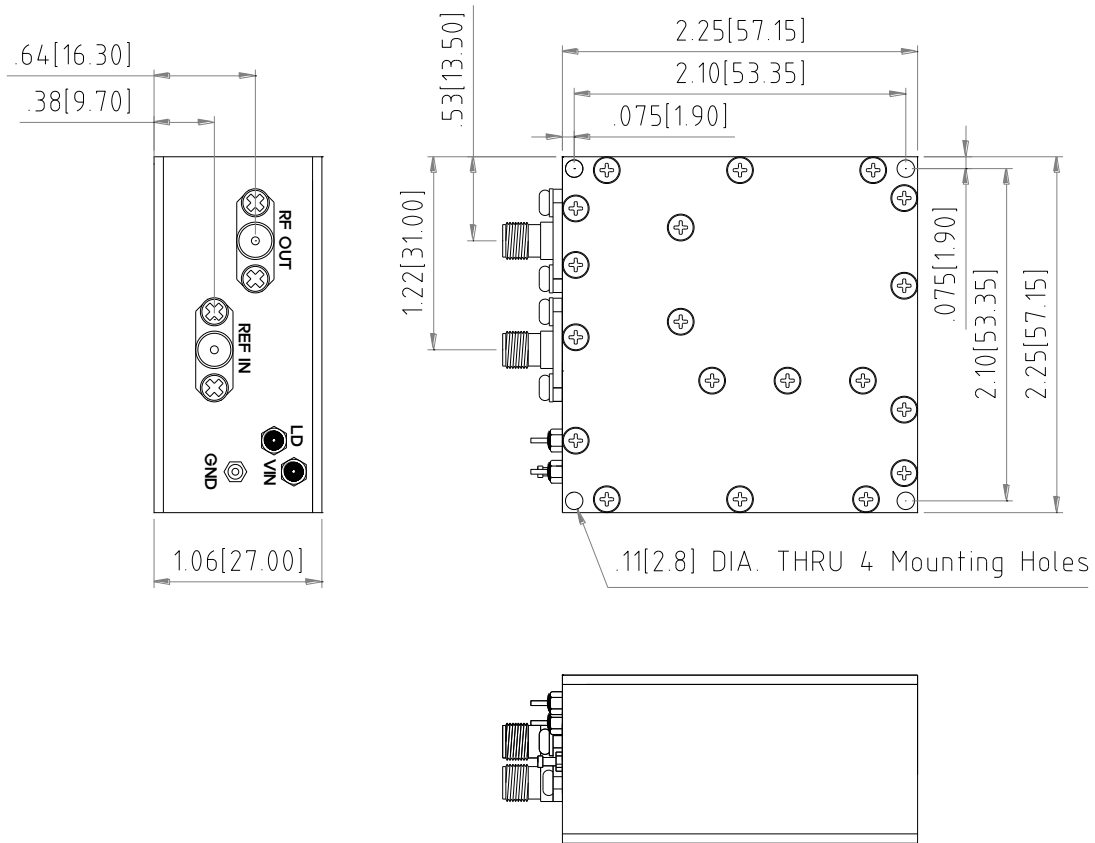
Parameters	Units	Specifications				Remarks	
		Min.	Typ.	Max.			
Single Frequency	GHz	3.4 to 35				Option-F1: 3.4 to 6.8 Option-F2: 6.8 to 9 Option-F3: 9 to 13.6 Option-F4: 13.6 to 24 Option-F5: 24 to 35	
Frequency Step Size	MHz	0.001	1	125			
Impedance (Input/Output)	$\Omega$	50					
RF Output Power at 25 °C	dBm	17	20				
PFD/Refernce Spurious	dBc		-75	-65			
Integer Boundary Spurious	dBc	Contact Factory					
Harmonics	dBc		-25	-15			
Frequency Stability	ppm	Same as the reference					
Phase Noise (typ.) at PFD=100 MHz	Frequency Offset		3.4 GHz	6.8 GHz	12 GHz	24 GHz	
			-91	-85	-79	-73	
			-103	-97	-91	-85	
			-108	-102	-96	-90	
			-110	-104	-98	-92	
			-133	-127	-121	-115	
External Reference	Frequency	MHz	10 to 250				
	Input Power	dBm	-4	0	4		
Phase Lock Indicator Alarm	-	3.3 V (Locked), 0V (Unlocked)					
Supply Voltage	Vdc	5.5	6	6.5			
Current Consumption	mA	Consult Factory					
Connectors	RF Output (RF OUT)	-	SMA-Jack				
	Reference (REF IN) <sup>Note1</sup>	-	SMA-Jack				
	Supply Voltage (Vin)	-	EMI Feed-thru				
	Phase Lock-Detect (LD)	-	EMI Feed-thru				
	GND	-	Turret Thread Mount Terminal				
Operating Temperature	°C	-20 to 70					
Storage Temperature	°C	-40 to 85					
Housing (L x W x H)	mm	57.15 x 57.15 x 27					

Note 1

The 'REF IN' connector is not provided on units with internal reference.

## Housing Drawings

The 'REF IN' connector is not provided on units with internal reference.



## Ordering Information

### PMFS-P-a-bbb-c...c-dd-ee

- a: I = Internal Reference  
E = External Reference
- bbb: Reference Frequency (MHz)
- c...c: Output Frequency (MHz)
- dd: Output Power (dBm)
- ee: Supply Voltage

### Example

PMFS-P-E-100-23950-20-6

- E: External Reference
- 100: Reference Frequency = 100 MHz
- 23950: Output Frequency = 23,950 MHz
- 20: Output Power = 20 dBm
- 6: Supply Voltage = 6 V

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