

Features

- Ultra stable
- Low phase noise
- Module 57 × 74 mm

Applications

- Satellite communication
- Telecommunication
- RF circuits with low jitter
- Signal source with low phase noise



FPLO5774 Specifications

Parameter	Min.	Typ.	Max.	Unit	Condition
Supply voltage V_{CC}	11.4	12	12.6	V	@ +25 ±5 °C
	4.75	5	5.25	V	@ +25 ±5 °C
Warm-up current (@ +25 ±5 °C, still air)		265	400	mA	$V_{CC} = 12$ V
		656	900	mA	$V_{CC} = 5$ V
Steady state current (@ +25 ±5 °C, still air)		138	200	mA	$V_{CC} = 12$ V
		355	500	mA	$V_{CC} = 5$ V
External reference input					
Input frequency	5 or 10			MHz	@ +25 ±5 °C
Input level	0	5	13	dBm	@ +25 ±5 °C
Input frequency tolerance			±0.05	ppm	@ +25 ±5 °C
Frequency					
Output frequency range	10 ~ 125			MHz	
Initial frequency tolerance	±0.05	±0.1	±0.5	ppm	At shipment, nominal EFC, +25 °C
Frequency stability vs. temperature	±2	±4	±6	ppb	0 °C ~ +50 °C
	±3	±5	±10	ppb	-20 °C ~ +70 °C
	±5	±10	±50	ppb	-40 °C ~ +70 °C
	±25	±50	±100	ppb	-40 °C ~ +85 °C
Supply sensitivity			±20	ppb	$V_{CC} \pm 5\%$
Load sensitivity			±20	ppb	Load ±5%
Aging per day			±0.5	ppb	Standard
Aging first year			±50	ppb	Standard
RMS jitter (by E5052B)			1000	fs	12 kHz ~ 5 MHz
Frequency control					
Control voltage range	2.5 ± 2.5			V	
Frequency tuning range	±0.5	±1		ppm	
Tuning slope	Positive				
Non-linearity			10	%	
Lock					
Lock detect output	4.5	5		V	$V_{CC} = 12$ V
	3	3.3		V	$V_{CC} = 5$ V
Lock time		15	25	s	@ +25 ±5 °C

Output Characteristics						
Output	Parameter	Min.	Typ.	Max.	Unit	Condition
Sine wave	Output level	11	12	15	dBm	@ +25 ±5 °C, V _{CC} = 12 V
		6	8	10	dBm	@ +25 ±5 °C, V _{CC} = 5 V
	Harmonics		-40	-30	dBc	
	Spurious		-80	-70	dBc	
	Load		50		Ω	
CMOS	V _{OH}	4.5			V	Load = 15 pF, V _{CC} = 12 V
	V _{OL}			0.5	V	Load = 15 pF, V _{CC} = 12 V
	V _{OH}	3			V	Load = 15 pF, V _{CC} = 5 V
	V _{OL}			0.5	V	Load = 15 pF, V _{CC} = 5 V
	Duty cycle	45		55	%	@ (V _{OH} - V _{OL})/2
	Rise / fall time			6	ns	HCMOS output, load = 15 pF
	Load			15	pF	

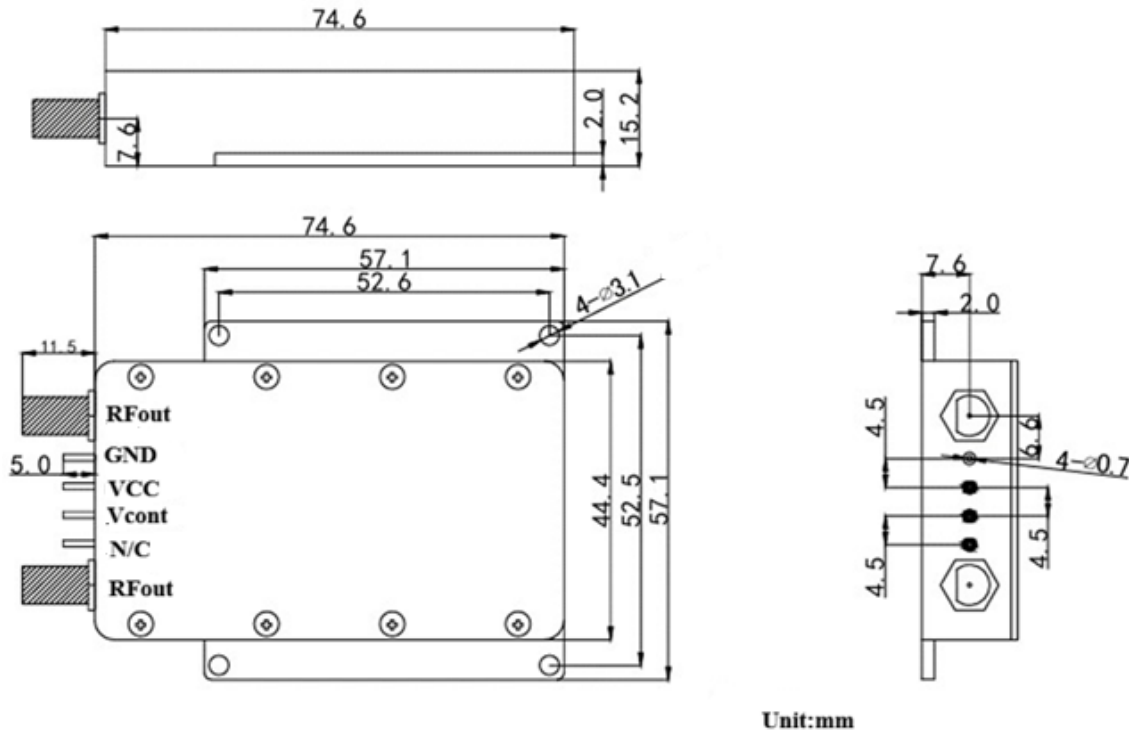
SSB Phase Noise @ 10 MHz								
Offset	1 Hz	10 Hz	100 Hz	1 kHz	10 kHz	100 kHz	1 MHz	Unit
Typ.	-98.9	-131.9	-152.7	-162.1	-166.8	-168.8	-172.8	dBc/Hz
Max.	-90	-130	-150	-160	-160	-160	-170	dBc/Hz

Measured at +25 °C

Maximum Ratings		
Parameter	Symbol	Rating
Supply voltage	V _{CC}	5 V / 12 V
Control voltage	V _{CON}	5 V
ESD, HBM / CDM / MM		4 kV / 2 kV / 200 V

Reliability	
Parameter	Condition
Temperature stress test	IEC 60068, GJB 360B
Mechanical stress test	IEC 60068, GJB 360B
EMC test (ESD)	IEC 61000, JESD22
Solderability	EIA/JESD22-B102-C
RoHS	RoHS Directive 2011/65/EU Annex II, recasting 2002/95/EC

Outline Dimensions & Pin Connections (mm)



Ordering Guide

Model	Output wave	Supply voltage	Reference frequency input	Temperature range	Frequency
FPLO5774	H: CMOS S: Sine wave	1: 12.0 Vdc 5: 5.0 Vdc	A: 5 MHz B: 10 MHz C: 5 MHz & 10 MHz	C: -20 ~ +70 °C I: -40 ~ +85 °C	XX.XX output in MHz

Code: FPLO5774 X X X X – XX.XX

Example: FPLO5774S1C-10

Environmental Conditions

Parameter	Range
Operating temperature range	−40 °C ~ +85 °C
Storage temperature range	−45 °C ~ +90 °C

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