Holzworth

12GHz / 20GHz RF Synthesizers

HSM12001B

HSM18001B

12GHz and 20GHz RF SYNTHESIZER MODULES

The Holzworth HSM Series RF Synthesizer Modules eliminate the PLL to maximize stability and enable multi-channel phase coherency without compromising on spectral performance. The HSM12001B operates from 10MHz to 12.5GHz and the HSM18001B operates from 10MHz to >20GHz. Both high performance synthesizer modules deliver the same unparalleled level of frequency/phase stability that the Holzworth HSM Series is known for. These CW sources have been designed for ease of system integration having phase noise and spectral performance that surpasses that of high end bench top CW sources.



100% PHASE COHERENT CHANNEL-CHANNEL

AGILE SWITCHING SPEED: 6µS (5% BW)

100MHz INTERNAL PRECISION OCXO

FAST PULSE MODULATION - BURST MODE

> 200,000 Hours Calculated MTBF

SPI, USB or Ethernet I/O Interfacing

15W POWER CONSUMPTION (steady state)

3 YEAR MANUFACTURER WARRANTY

Holzworth Instrumentation Inc. Boulder, Colorado, USA Sales: +1.303.325.3473

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HSM12001B HSM18001B 12GHz / 20GHz RF Synthesizers

SPECIFICATIONS

PARAMETER	MIN	TYPICAL	MAX	COMMENTS
Frequency Range				
HSM12001A	10 MHz		12.5 GHz	
HSM18001A	10 MHz		18 GHz	Settable to 20.48GHz
Frequency Resolution	0.01 Hz			
Phase Offset	-180 deg		+180 deg	
Switching Speed (Frequency)				FINAL VALUES. ZERO SETTLING TIME.
SPI Mode (ASCII)			300 µs	
SPI Mode (Binary)			100 µs	
List/Step Sweep Mode (WB)			100 µs	Wideband Steps (full bandwidth)
List/Step Sweep Mode (NB)			6 µs	Narrowband Steps (<5% bandwidth)
Output Power	-20 dBm		+20 dBm	Settable from -20dBm to +23dBm
Resolution			0.01 dB	
Switching Speed (Amplitude)				
SPI Mode (Binary)			100 µs	Sottling to within 0.1 dP
List / Step Sweep Mode (NB)			6 µs	Setting to within 0.1 dB
Absolute Level Accuracy				
10 MHz – 6 GHz		±0.15 dB	±0.5 dB	25C to 35C (case temperature)
6 GHz – 18 GHz		±0.25 dB	±1.0 dB	
SSB Phase Noise				
2.0 GHz, 10kHz offset		≤ -128 dBc/Hz		Design goal: -128 dBc/Hz
4.0 GHz, 10kHz offset		≤ -122 dBc/Hz		Design goal: -122 dBc/Hz
8.0 GHz, 10kHz offset		≤ -114 dBc/Hz		Design goal: -116 dBc/Hz
12.0 GHz, 10kHz offset		≤ -110 dBc/Hz		Design goal: -113 dBc/Hz
18.0 GHz, 10kHz offset		≤ -106 dBc/Hz		Design goal: -109 dBc/Hz
Harmonics (CW mode)		-30dBc		
Non-Harmonics (CW mode)		-60 dBc		
Sub-Harmonics (CW mode)		-60 dBc		
Jitter (RMS) at 18GHz		55 fs		5kHz < BW < 20MHz
Dimensions	3.80 x 6.00 x 1.04 (inches), 96.5 x 152.4 x 26.4 (mm)			



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