HX4920

24GHz Frequency Divider

- **Digital Divide-by-4 Architecture**
- **4GHz to 24GHz Input Range**
- **1GHz to 6GHz Output Range**
- **10GHz: -136dBc/Hz Residual Noise Floor**
- **Maintains signal power levels**
- **RoHS Compliant**

SUMMARY

The Holzworth HX4920 Frequency Divider was developed as a frequency extension accessory for the HA7062 Real Time Phase Noise Analyzer. When used in conjunction with the Holzworth HA7062C, the phase noise measurement capability can be extended to cover up to 24GHz. As shown on page 3, using 2x HX4920 units with an HA7062C cross correlation phase noise analyzer will provide the most optimized measurement noise floor.

There are many potential applications for the HX4920. The 10GHz additive (residual) phase noise floor is -136dBc/Hz (10kHz offset, typical), to maintain the signal integrity of high performing signals. The additive phase noise performance varies with frequency as shown on page 2.

SPECIFICATIONS [1]

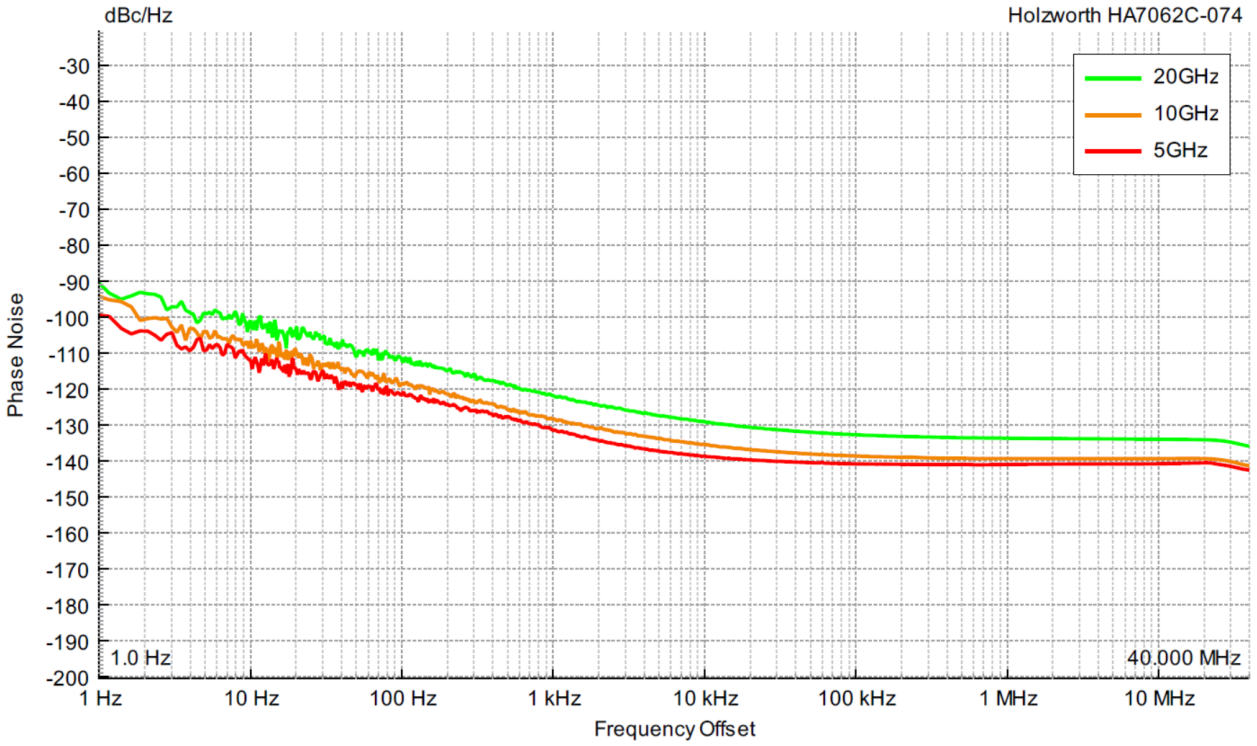
PARAMETER	MIN	TYP	MAX	UNITS	COMMENTS
Input Frequency Range	4		24	GHz	50 ohms
Output Frequency Range	1		6	GHz	50 ohms
Input Power	4	7	10	dBm	50 ohms
Output Power	6	8	10	dBm	50 ohms
Phase Noise (Residual) 5GHz (10kHz offset) 10GHz (10kHz offset) [2] 20GHz (10kHz offset)		 -138 -136 -129		 dBc/Hz dBc/Hz dBc/Hz	 Input Referred (see page 2) Input Referred (see page 2) Input Referred (see page 2)
DC Supply	9	12	15	V_{DC}	±10%, 100mA
Input RF Connector	SMA Jack (female), 50 ohms				
Output RF Connector	SMA Plug (male), 50 ohms				
DC Connector	SMA Jack (female)				
Housing Dimensions (LxWxH)	2” x 1.625” x 0.5” (50.8mm x 41.3mm x 12.7mm)				

[1] Specifications are subject to change per the discretion of Holzworth Instrumentation, Inc.
[2] 10GHz is the manufacturing test frequency for shipped product.

HX4920 PERFORMANCE DATA

The HX4920 is a digital divide-by-4 frequency division architecture that incorporates a low phase noise amplification circuit to maintain the phase noise of an RF signal at usable power levels.

The additive phase noise performance plots shown below represent the typical performance of the HX4920 Frequency Divider. Typical phase noise performance may vary from unit to unit.



All HX4920 units are tested for additive phase noise performance, prior to shipment. Final performance phase noise tests are specifically made at 10GHz.

Please contact Holzworth directly for additive phase noise performance data at any specific frequencies that are not included here.

Holzworth Support
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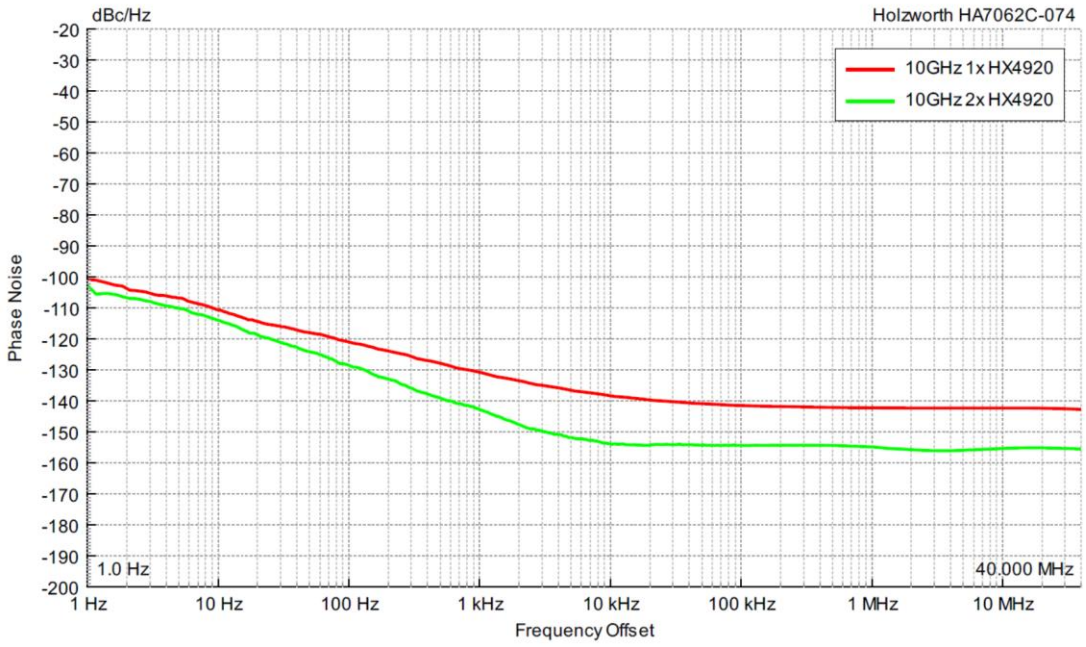
email: support@holzworth.com

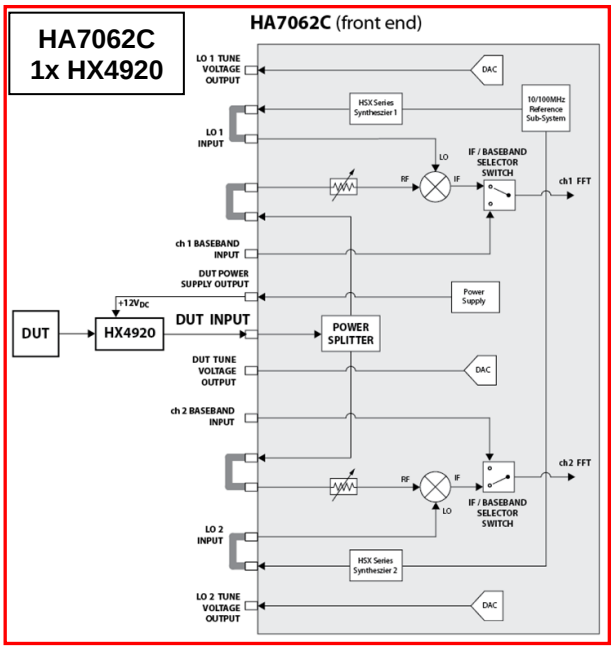
HX4920
24GHz Frequency Divider

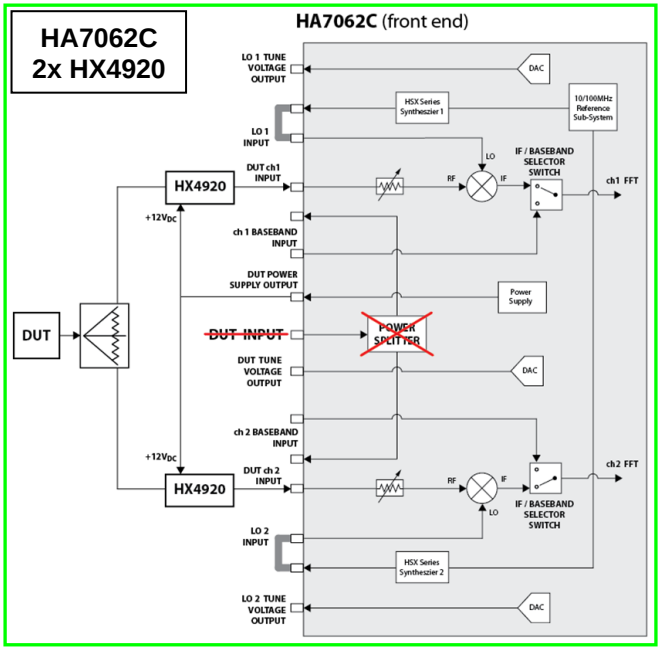
HX4920 Frequency Extension for the HA7062C Phase Noise Analyzer

The Holzworth HX4920 Frequency Divider was developed as a frequency extension accessory for the HA7062C Real Time Phase Noise Analyzer to increase the input frequency range up to 24GHz. Depending on the performance of the DUT, utilizing a pair of HX4920 units may be necessary to properly quantify the performance of the Device Under Test.

As demonstrated below, using 2x HX4920 units with an HA7062C Phase Noise Analyzer will provide an improved measurement noise floor versus that when using a single HX4920 unit.

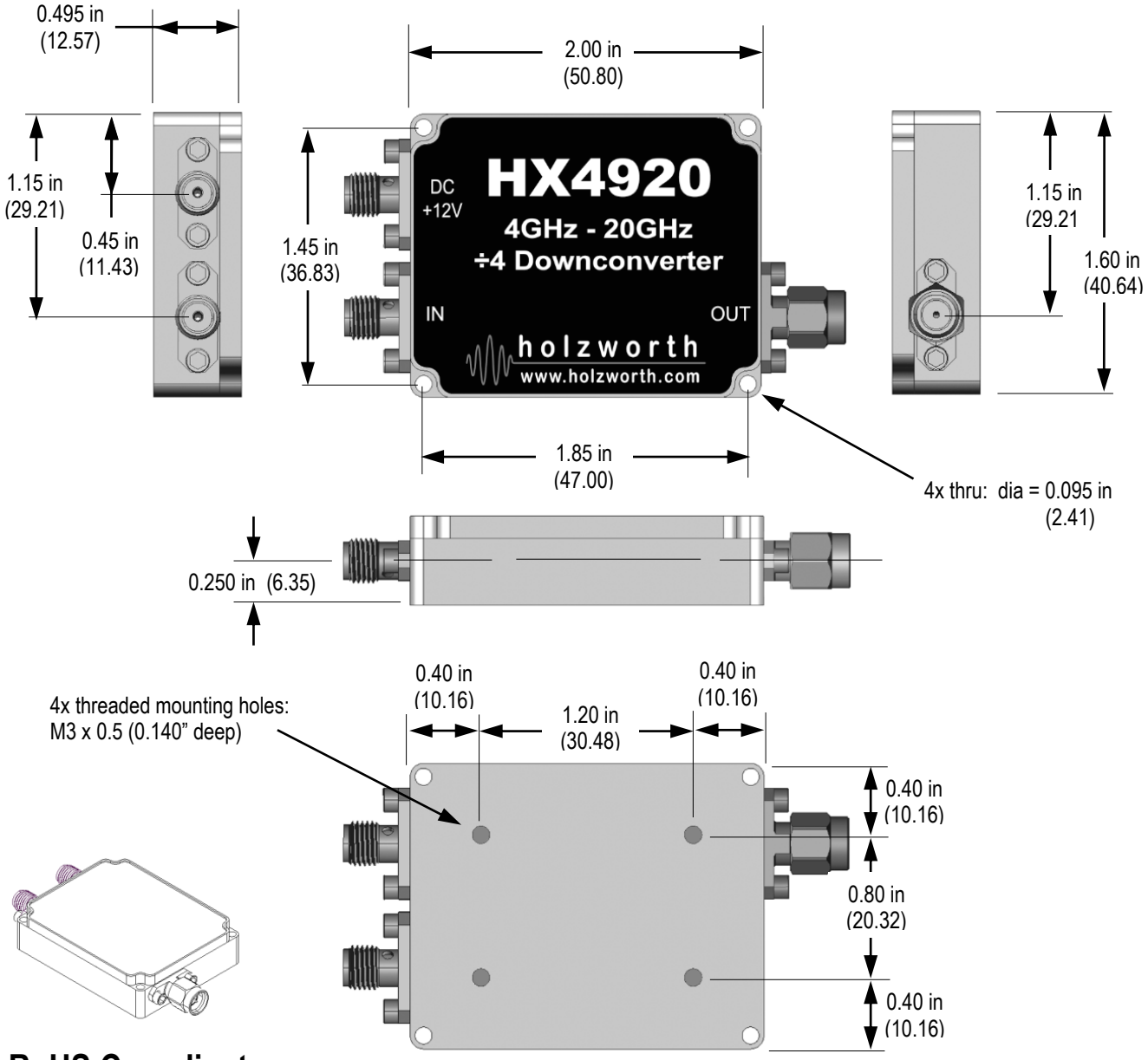






MECHANICAL

The HX4920 Downconverter comes in a compact, shielded housing complete with both through and threaded mounting holes for ease of system integration. Mechanical dimensions are listed in both inches and (mm). Tolerances are to within ±0.010 inches.



RoHS Compliant

WARRANTY

All Holzworth downconverters come with a 1 year 100% product warranty covering manufacturing defects. All product repairs and maintenance must be performed by Holzworth Instrumentation. Holzworth reserves the right to invalidate the warranty for any product that has been tampered with or used improperly. Refer to Holzworth Terms & Conditions of Sales for more details.