

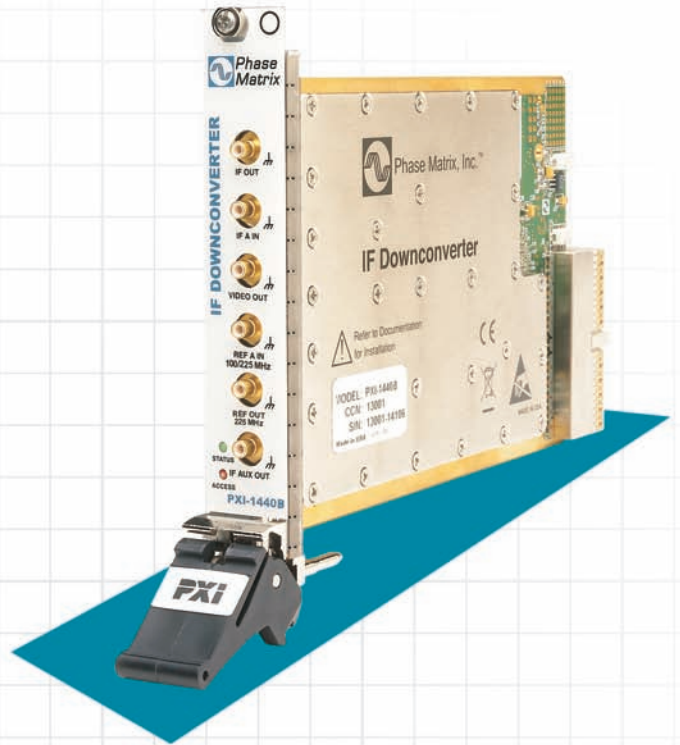


PXI MICROWAVE IF DOWNCONVERTER MODULE

Model PXI-1440B

The PXI-1440B IF Downconverter Module is a PXI 3U, 1-slot module that facilitates additional frequency translations to lower intermediate frequencies (IF) when high-dynamic range digitization is required. The module can receive an IF input from a wideband downconverter. The IF-input signal can either be bypassed and sent out in wideband mode or filtered and further down converted and routed through an alias filter in the narrowband mode. The input source to this module is normally the IF signal from the RF Downconverter Module (PXI-1430B) or from the MW Downconverter Module (PXI-1420). Additionally, the PXI-1440B contains video-processing circuitry to enable video demodulation or IF video triggering implementation in a PXI downconverter system. Features and controls include: incoming signal routing, anti-alias filter routing, IF output routing, LO level indicator, and several signal-path options for testing.

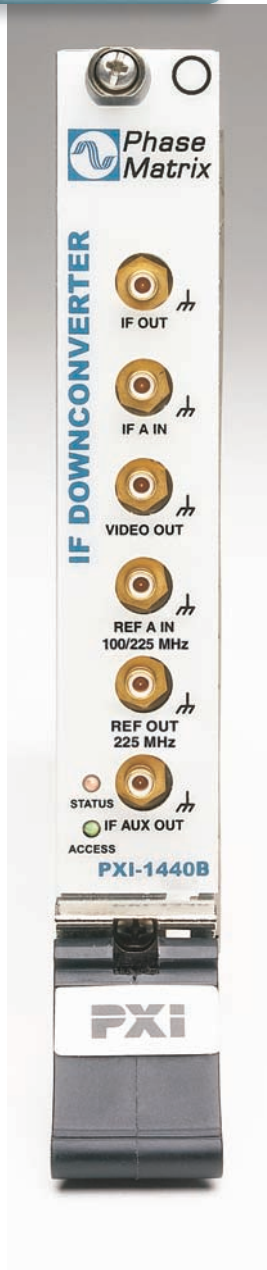
The PXI-1440B IF Downconverter Module is intended for use in applications such as instrumentation, microwave receivers, signal intelligence, or anywhere a microwave signal needs to be down converted to a baseband frequency for data capture, analysis, and measurement.



PXI MICROWAVE IF DOWNCONVERTER MODULE

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Front Panel



Software-User Interface

Unit Info:

Model	Serial Number	CCN	FPGA P/N
PXI-1440B	15101-14101	15101	2070113-00

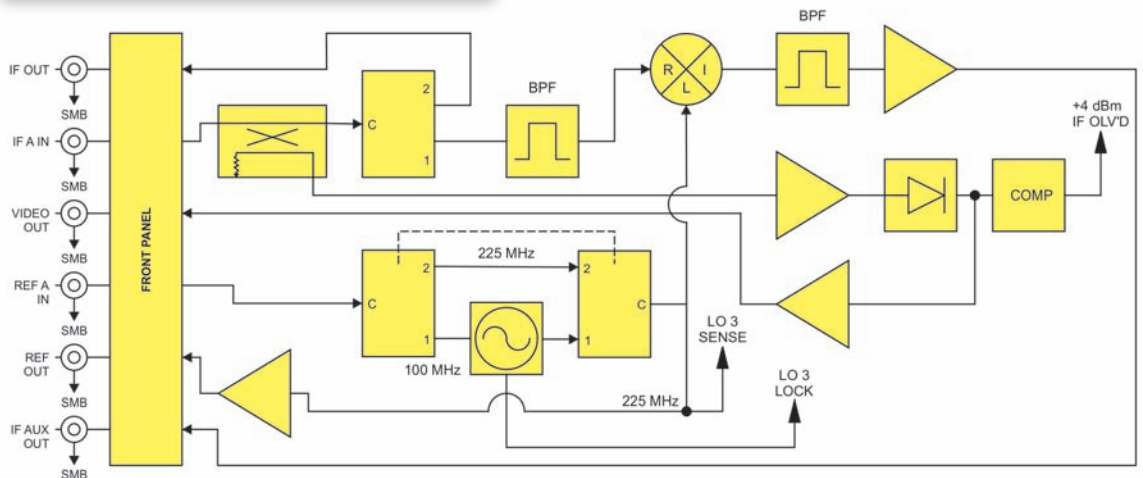
IF A IN to IF OUT Loss

270	280	290	300	MHz
-2.241	-2.221	-2.241	-2.221	dB

25MHz/8MHz Filter Response

20.8	21.06	21.3	21.54	MHz
0.264	0.224	0.184	0.144	dB

Simplified Block Diagram



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Specifications and ordering information subject to change without notice.

Specifications

IF INPUT SPECIFICATIONS

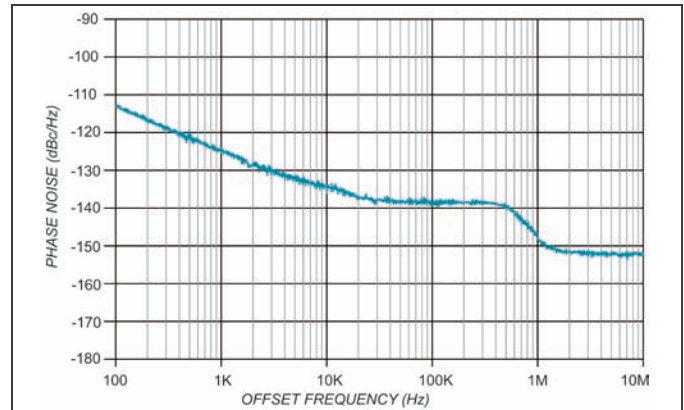
DESCRIPTION	SPECIFICATION
IF (A) IN Frequency Range	100 kHz to 425 MHz
IF (A) IN Operating Power Levels	-2 dBm nom.
IF (A) IN Return Loss	-10 dB max.
IF (A) IN to IF AUX OUT Noise Figure	25 dB max.
IF (A) IN Max. Level (<i>continuous without damage</i>)	+10 dB max.

IF OUTPUT SPECIFICATIONS

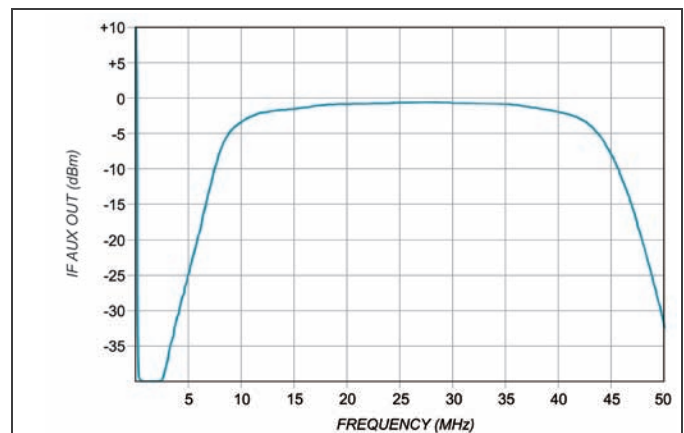
DESCRIPTION	SPECIFICATION
IF OUT (1 dB BW)	100 Hz to 425 MHz
IF AUX OUT (3 dB BW)	30 MHz min. (23 MHz 1 dB BW typ.)
IF AUX OUT Fc	25 MHz typ.
IF OUT/IF AUX OUT Insertion Loss	-2 dB max.
IF AUX OUT Maximum Level	+4 dBm (<i>IF overload warning</i>)
IF AUX OUT OIP3	+36 dBm min. (2 tones produce < 75 dBc intermods @ -2 dBm, 25 MHz IF OUT)
IF AUX OUT Second Harmonic Distortion	70 dBc min. (@ -2 dBm, 25 MHz IF OUT)
IF OUT OIP3	+36 dBm min. (2 tones produce < 75 dBc intermods @ -2 dBm, 25 MHz IF OUT)
IF AUX OUT 1 dB Compression Point	+15 dBm min.

IF VIDEO SPECIFICATIONS

DESCRIPTION	SPECIFICATION
Output Rise Time	20 ns max. @ 250 MHz IF Out
DC Output Level (w/ -2 dBm IF Out)	+1 V min. (<i>polarity positive</i>)
DC Level Error Over Temp.	±2 dB (0 to + 55° C)



Residual Phase Noise, typ. (*does not include LO B contribution*)



IF AUX OUT Flatness/Response, typ.

PXI MICROWAVE IF DOWNCONVERTER MODULE

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Specifications (continued)

REF OSCILLATOR INPUT SPECIFICATIONS

DESCRIPTION	SPECIFICATION
REF A IN Frequency	100 MHz \pm 1 ppm (<i>master mode</i>) / 225 MHz \pm 1 ppm (<i>slave mode</i>)
REF A IN Power	0 dBm \pm 3 dB
REF OUT Frequency	225 MHz nom (<i>REF OUT used for multi-module, phase-coherent operation</i>)
REF OUT Power	0 dBm \pm 3 dB
REF A IN Impedance	50 Ω nom.

GENERAL SPECIFICATIONS

DESCRIPTION	SPECIFICATION
Temperature Range	
Operating	0° to +55° C
Non-Operating	-40° to +70° C
Relative Humidity	0 to 90% (<i>non-condensing</i>)
Certifications	
CE Compliance	73/23/EEC; Low Voltage Directive (safety) 89/336/EEC; Electromagnetic Compatibility Directive (EMC)
Safety	IEC 61010-1
EMI/RFI	IEC 61326-1, MIL-STD 461E/RS102, MIL-STD 461E/RS103
Weight	
Shipping Weight	1 lb./0.5 kg
Connectors	
IF A/B IN	SMB (m)
IF OUT/IF AUX OUT	SMB (m)
VIDEO OUT	SMB (m)
REF A IN	SMB (m)
Warranty	1 Year

PXI MICROWAVE IF DOWNCONVERTER MODULE

Model PXI-1440B

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Specifications (continued)

PXIbus SPECIFICATIONS

DESCRIPTION

SPECIFICATION

Module Type 3U/1-Slot

Warm-up Time 15 minutes max.

DC Power Dissipation	+3.3 V	+5 V	+12 V	-12 V	Total Power
	0.1 A	0.1 A	0.5 A	0	7 W max.

ORDERING INFORMATION

Model PXI-1440B

Options None

Accessories

MPXI-14XX-ACC01 Cable set

Related Products PXI Modules PXI-1410, PXI-1420, PXI-1430B, PXI-1450B

Notes:

1. Software, operation manuals, and quick-start guides are available online www.phasematrix.com

PXI MICROWAVE *IF DOWNCONVERTER MODULE*

Model PXI-1440B

Phase Matrix, Inc. designs and manufactures RF and microwave test-and-measurement (T&M) instruments, subsystems, and components and is a wholly owned subsidiary of National Instruments. Our array of instruments includes traditional benchtop frequency counters, modular (VXI) pulsed-frequency counters, modular (VXI and PXI) synthetic instruments, including downconverters, upconverters/synthesizers and local oscillators that are designed for both commercial and military applications. In addition, we produce instrument-grade, fast-switching synthesizer modules that can be used in various instruments or subsystems. We also manufacture a line of narrowband and broadband microwave components, ranging from VCOs to complex custom-built assemblies for military instrumentation and telecommunications applications.

Data sheet PN: DS_1440B Rev. A Oct. 2013

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