

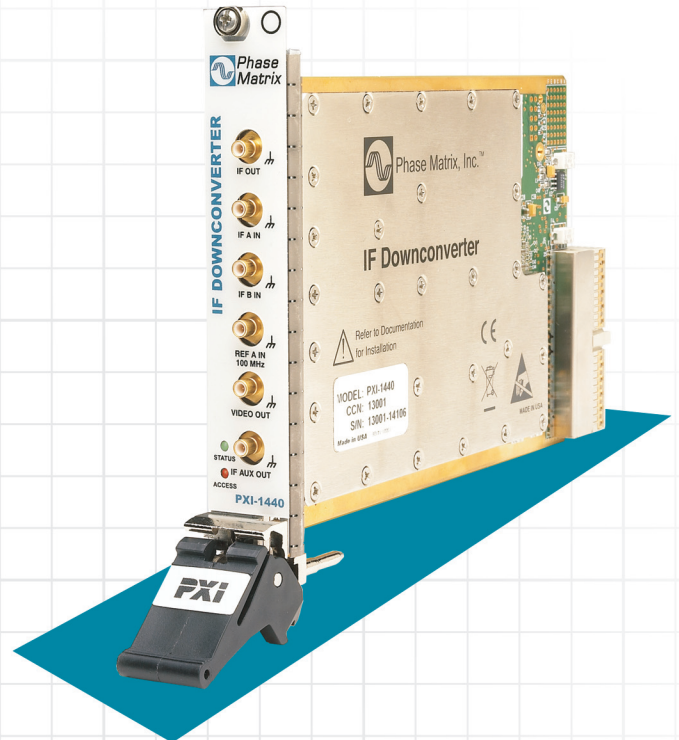


PXI MICROWAVE IF DOWNCONVERTER MODULE

Model PXI-1440

The PXI-1440 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 multiple IF inputs from two different downconverter modules. The IF-input signals can either be bypassed and sent out in wideband mode or filtered and further down converted before being up routed to the appropriate alias filter for additional processing in the narrowband mode. The two input sources to this module are normally the IF signals from the RF Downconverter Module (PXI-1430B) or from the MW Downconverter Module (PXI-1420). Additionally, the PXI-1440 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-1440 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
Systems Alliance

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Front Panel



Software-User Interface

Unit Info:

Model	Serial Number	CCN	FPGA Part No.	PLX Part No.	Last Cal Date
PXI-1440	13001-14115	13001	2070000-01 A	2070000-01 A	02182010

IF A IN to IF OUT Loss:

270	280	290	300	MHz
-1.11	-1.06	-1.03	-1.06	dB

IF B IN to IF OUT Loss:

270	280	290	300	MHz
-1.1	-1.05	-1.02	-1.04	dB

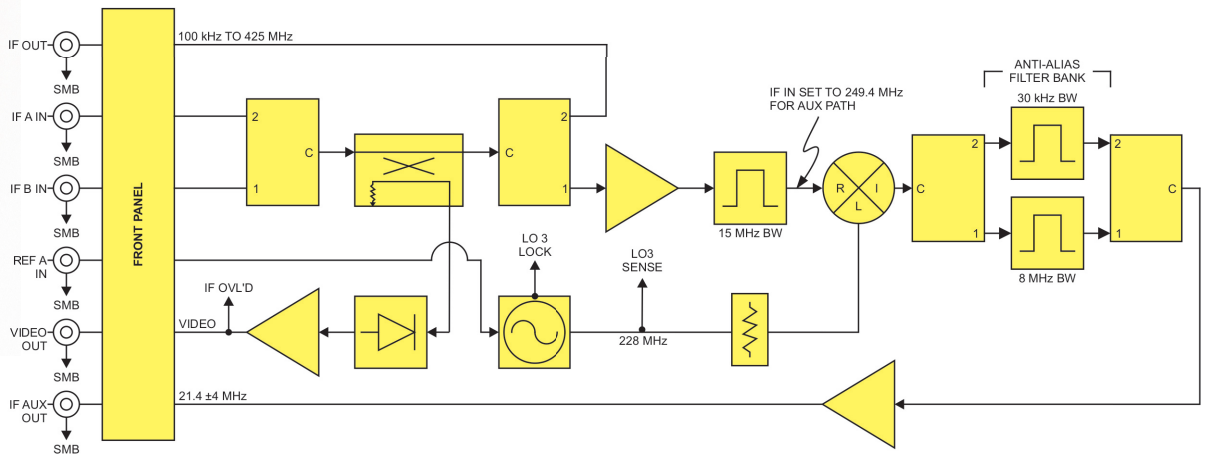
8MHz Filter Response:

20.75	21	21.25	21.5	MHz
0.82	0.85	0.86	0.88	dB

30kHz Filter Response:

21.398	21.399	21.4	21.401	MHz
0.45	0.58	0.73	0.9	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/B) IN Frequency Range	100 kHz to 425 MHz
IF (A/B) IN Operating Power Levels	-2 dBm nom.
IF (A/B) IN Return Loss	-10 dB max.
IF (A/B) IN to IF AUX OUT Noise Figure	25 dB max.
IF (A/B) IN Max. Level (<i>continuous without damage</i>)	+10 dB max.

IF OUTPUT SPECIFICATIONS

DESCRIPTION	SPECIFICATION
IF OUT (<i>1 dB BW</i>)	100 Hz to 425 MHz
IF AUX OUT (<i>1 dB BW</i>)(<i>IF IN set to 249.4 MHz</i>)	30 kHz/8 MHz BW (<i>user switchable, centered @ 21.4 MHz</i>)
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. (<i>2 tones produce < 75 dBc intermods @ -2 dBm, 21.4 MHz IF OUT</i>)
IF AUX OUT Second Harmonic Distortion	70 dBc min. (<i>@ -2 dBm, 21.4 MHz IF OUT</i>)
IF OUT OIP3	+36 dBm min. (<i>2 tones produce < 75 dBc intermods @ -2 dBm, 21.4 MHz IF OUT</i>)
IF AUX OUT 1 dB Compression Point	+15 dBm min.

IF VIDEO SPECIFICATIONS

DESCRIPTION	SPECIFICATION
Output Rise Time	15 ns max. @ 250 MHz IF Out
DC Output Level (<i>w/ -2 dBm IF Out</i>)	+1 V min. (<i>polarity positive</i>)
DC Level Error Over Temp.	±2 dB (0 to + 55° C)

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Specifications (continued)

REF OSCILLATOR INPUT SPECIFICATIONS

DESCRIPTION	SPECIFICATION
REF A IN Frequency	100 MHz \pm 1 ppm
REF A IN 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

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Specifications (continued)

PXIbus SPECIFICATIONS

DESCRIPTION	SPECIFICATION
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Module Type	3U/1-Slot
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Warm-up Time	15 minutes max.
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DC Power Dissipation	+3.3 V	+5 V	+12 V	-12 V	Total Power
	0.1 A	0.1 A	0.5 A	0.0 A	7 W max.

ORDERING INFORMATION

Model	PXI-1440
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Options	None
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Accessories

MPXI-14XX-ACC01	Cable set
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Related Products	PXI Modules PXI-1410, PXI-1420, PXI-1430B, PXI-1450B
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Notes:

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

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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_1440 Rev. C Oct. 2013

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