

z8801
Local Oscillator
PXI



Port Descriptions



Front Panel

Label	Type	Description
REF OUT	SMA	Backplane reference clock output
REF IN	SMA	Reference clock input
LO OUT	SMA	Local oscillator output

LO Output

LO Output Channel

Specification	Value
LO Channel	One single-ended output, LO OUT
Output Impedance	50 Ω , nominal
Output VSWR	$\leq 2.0:1$, 2 GHz to 8 GHz
Connector	SMA

LO Output Frequency

Specification	Value
Output Frequency Range	2 GHz to 8 GHz ¹
Output Frequency Resolution	1 Hz
Output Frequency Switching Speed	≤ 1 ms, typical end-to-end

¹ Frequencies over 6 GHz not tested

LO Output Level

Specification	Value
Output Level Range	+10 dBm to -10 dBm
Output Level Resolution	0.1 dB
Output Level Accuracy (25°C +/- 10°C ambient)	≤ ±1 dB (≤ ±0.5 dB Typical)
Output Level Temperature Drift	-0.04 dB/ °C
Output Level Switching Speed	≤ 1 ms, end-to-end

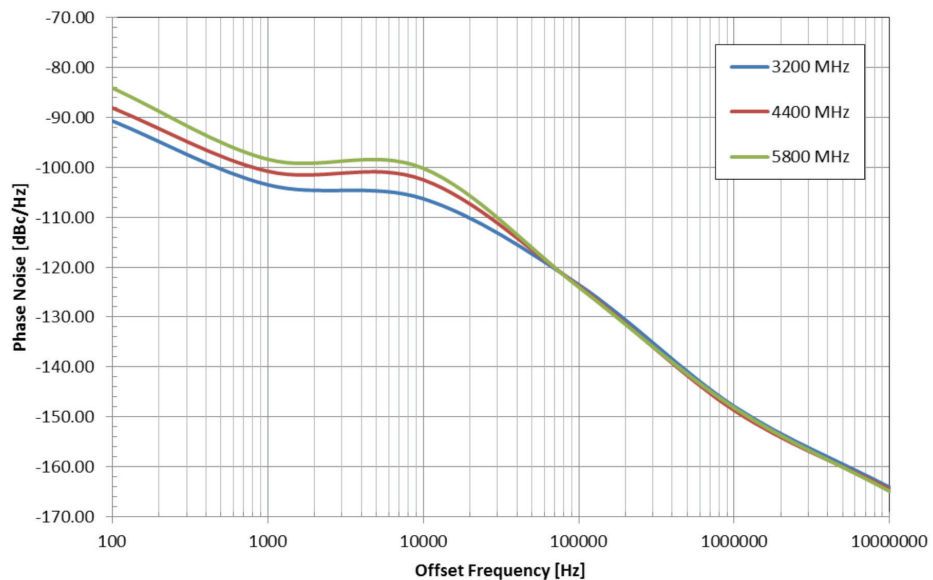
LO Output Spectral Purity

Specification	Value
Spurious-Free Dynamic Range (excluding harmonics)	≥ 70 dBc typical
LO Output Harmonics	≤ -15 dBc

LO Output Single Sideband (SSB) Phase Noise

Specification	Value	
Phase Noise, SSB, 100 kHz Offset	Frequency	Specification
	3200 MHz	-123.50 dBc/Hz
	4400 MHz	-123.80 dBc/Hz
	5800 MHz	-124.00 dBc/Hz

LO Phase Noise



Input Reference (REF IN)

Specification	Value
Functionality	Reference Input
Frequency	10 MHz, +/- 3 ppm
Input Level	0 dBm, +/- 3 dB
Input Impedance	50 Ω Nominal
Connector	SMA

Output Reference (REF OUT)

Specification	Value
Functionality	Backplane 10 MHz Timebase Reference Output
Frequency	10 MHz
Output Level	0 dBm, +/- 3dB
Connector	SMA

Backplane Trigger 0-7

Specification	Value
Functionality	Not supported
Direction	Input

Instrument Stored States

Specification	Value
Functionality	Non-volatile storage of instrument setup configuration
Stored States	30 State 0 is Reset State Power-On State programmable

LED Indicators

Specification	Value
RDY (Ready)	OFF: Hardware failure ON: Passed power-up self-test TOGGLE: Error pending in queue
HST (Host)	ON: Idle PULSE: Instrument Identify enabled
LCK (Lock)	OFF: Not locked to timebase reference ON: Locked to timebase reference
ACT (Active)	OFF: Not outputting LO signal ON: Outputting LO signal

PXI Interface

Specification	Value
PCI Standard Compatibility	Version 2.2
PXI Slot Compatibility	PXI Standard Slot and PXIe Hybrid Slot Compatible
PXI Timing & Triggering Signals (XJ4 Connector)	PXI_TRIG[0:7] input/output PXI_STAR input PXI_CLK10 input

Power & Cooling

Power Supplies

Platform	Voltage	Typical Current	Maximum Current
PXI	+3.3 VDC	0.25 A	0.26 A
	+5 VDC	2.65 A	4.00 A
	+12 VDC	0.05 A	0.05 A
	-12 VDC	0.01 A	0.01 A

Total Cooling & Power Consumption

Platform	Typical Cooling & Power	Maximum Cooling & Power
PXI	14.6 W	21.5 W

Physical & Environmental

Size & Weight

Specification	Value
Physical Size	3U, 2-slot PXI Module
Dimensions	8.25" x 1.59" x 5.25" (L x W x H) 20.96 cm x 4.03 cm x 13.34 cm
Weight	1 lb 8.1 oz or 0.683 Kg

Temperature Range

Specification	Value
Operating	0 °C to +50°C ambient (MIL-PRF28800F Class 3)
Storage	-40 °C to +75 °C ambient (MIL-PRF28800F Class 3)
Calibration Range	+20 °C to +30 °C ambient, after 20 minute warm-up period, to meet all specification accuracies
Over-Temperature	Automatic shutdown if internal temperature exceeds +70°C

Relative Humidity

Specification	Value
Operating or Storage < +30°C +30°C to +40°C > 40°C	5 to 95 ± 5%, non-condensing 5 to 75 ± 5%, non-condensing 5 to 45 ± 5%, non-condensing

Altitude

Specification	Value
Operating	Up to 5 km
Storage	Up to 15 km

Terminology

Numeric Prefixes

When referring to numeric values, this document will use SI (International System of Units) and IEC (International Electrotechnical Commission) standard prefixes. Prefix definitions are in the following table.

Prefix	Multiplier
n (nano)	$1/(1000 \times 1000 \times 1000)$
μ (micro)	$1/(1000 \times 1000)$
m (milli)	$1/1000$
k/K (kilo)	1000
M (Mega)	1000×1000
G (Giga)	$1000 \times 1000 \times 1000$
Ki (Kibi)	1024
Mi (Mebi)	1024×1024
Gi (Gibi)	$1024 \times 1024 \times 1024$

Differential Outputs

Single-Ended is used to refer to the output on either the + or – output pin

Differential is used to refer to the output between the + and- output pins

Vd indicates Volts differential

Vppd indicates Volts peak-to-peak differential

Safety

This product is designed to meet the requirements of the following standard of safety for electrical equipment for measurement, control and laboratory use: EN 61010-1

Electromagnetic Compatibility

CE Marking EN 61326-1:1997 with A1:1998 and A2:2001 Compliant

FCC Part 15 (Class A) Compliant

Emissions

EN 55011	Radiated Emissions, ISM Group 1, Class A, distance 10 m, emissions < 1 GHz
EN 55011	Conducted Emissions, Class A, emissions < 30 MHz Immunity
EN 61000-4-2	Electrostatic Discharge (ESD), 4 kV by Contact, 8 kV by Air
EN 61000-4-3	RF Radiated Susceptibility, 10 V/m
EN 61000-4-4	Electrical Fast Transient Burst (EFTB), 2 kV AC Power Lines
EN 61000-4-5	Surge
EN 61000-4-6	Conducted Immunity
EN 61000-4-8	Power Frequency Magnetic Field, 30 A/m
EN 61000-4-11	Voltage Dips and Interrupts

CE Compliance

This product meets the necessary requirements of applicable European Directives for CE Marking as follows:

73/23/EEC Low Voltage Directive (Safety)

89/336/EEC Electromagnetic Compatibility Directive (EMC)

See Declaration of Conformity for this product for additional regulatory compliance information.







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