



HANDHELD REAL-TIME SPECTRUM ANALYZER

PXN-60
UP TO 6.3 GHz



Key facts

Frequency range: 9 kHz to 6.3 GHz

1 GHz DANL: -162 dBm/ Hz

1 GHz phase noise: -110 dBc/Hz@10 kHz

Analysis Bandwidth: up to 25 MHz

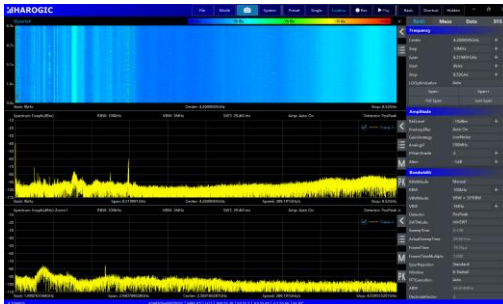
Sweep speed > 100 GHz/s (RBW \geq 250 kHz)

Weight: 1.5 kg, 10.1-inch all touch screen

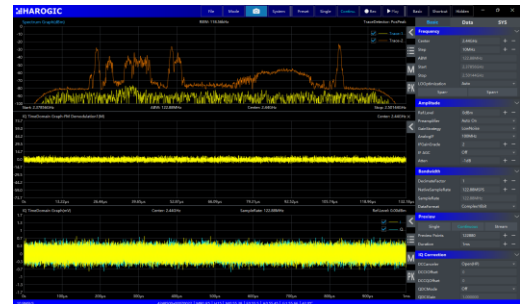
3-year warranty

Applications

Standard spectrum sweep



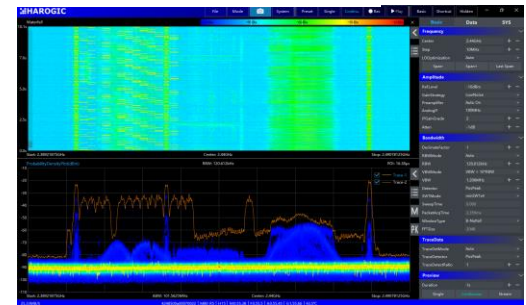
IQ streaming and analysis



Power vs time measurement



Real-time analysis



Specifications*

FREQUENCY

Frequency Range	PXN-60 9 kHz-6.3 GHz	
Reference Clock	Internal or external	
Frequency Accuracy	TCXO (std.)	<1 ppm, Manual correction is available
	OCXO (opt01)	<1 ppm, Manual correction is available
Aging and Temperature Stability	TCXO (std.)	<1 ppm/year, <1 ppm
	OCXO (opt01)	<1 ppm/year, <0.15 ppm

SPECTRUM PURITY

SSB Phase Nois (dBc/Hz)

Carrier Frequency	PXN-60			
	500 MHz	1 GHz	3 GHz	6 GHz
1 kHz	-110.3	-105.0	-97.5	-91.2
10 kHz	-118.4	-110.4	-101.2	-99.3
100 kHz	-118.1	-110.5	-100.1	-97.4
1 MHz	-132.1	-130.1	-125.5	-120.2

Residual Response (dBm)
 Spur reject = Enhanced
 RBW =1 kHz
 Positive Peak Detector

Reference Level (R.L.)	PXN-60		
	0 dBm	-20 dBm	-50 dBm
100 kHz-100 MHz	-90	-100	-125
100 MHz-6.3 GHz	-90	-98	-110

Image response	> 80 dBc (typ.) for spur reject = enhanced > 35 dBc (typ.) for spur reject = off
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IF response	Low IF Architecture
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Local oscillator Related Spurious	<-60 dBc Center Frequency $\pm (N/M)*100$ MHz, N,M = 1,2,3,4,5...
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IIP3 / IIP2 (dBm)

Carrier Frequency	PXN-60		
	1 GHz	3 GHz	6 GHz
R.L. = 20dBm	48.1	45.1	40.5
R.L. = 0dBm	26.7	23.5	21.2
R.L. = -20dBm	5.1	2.6	-0.9
R.L. = -50dBm	-21.2	-22.6	-25.9

SIGNAL PROCESSING

Analysis Bandwidth	Maximum 25 MHz, Decimate Factor:1
IQ Data	31.25 MSPS, Decimate factor: 1,2,4,8,16,32,64,128,256 supported (FPGA)
Storage Depth	The built-in memory depth is 128 Mbytes Supports continuous and uninterrupted storage when the data generation rate is less than the bus bandwidth, and the storage depth is only limited by the hard disk capacity
External Trigger Response	Maximum response frequency 500 times/sec

AMPLITUDE

Max. input power (CW)	23 dBm	30 MHz-6.3 GHz and the preamplifier is off
	10 dBm	9 kHz-30 MHz or preamplifier is on
Max. DC Voltage	±10 VDC	
Display Range	DANL-23 dBm	
Amplitude Accuracy	±1.5 dB	
IF in-band flatness	±1.75 dB (analog bandwidth = 100 MHz)	
Reference level (R.L.)	DANL-23 dBm	
RF Preamplifiers	automatically turn on or forcibly turn off	
VSWR	R.L. = 10 dBm	<1.7:1
30MHz to Max.Freq.	R.L.= 0 dBm	<2.0:1
	R.L.= -40 dBm	<2.5:1



**Display Average Noise Level
(DANL) (dBm/Hz)
RBW=10 kHz**

Reference Level	PXN-60		
	0 dBm	-20dBm	-50 dBm
9 kHz	-134	-149	-159
100 kHz	-140	-152	-15x
100 MHz - 3.0 GHz	-145	-161	-166
3.0 GHz - 6.3 GHz	-141	-158	-164

**STANDARD
SPECTRUM ANALYSIS**

Detector	Positive peak, Negative peak, Sampling, Average, RMS, Max Power
RBW	0.1 Hz-2.5 MHz
VBW	0.1 Hz-10 MHz
Trace Function	Sample, Positive Peak, Negative Peak, Local average, Maximum hold, Minimum hold, Average
Data Chart	SASstudio4 software provides spectrum, waterfall chart, and historical trace
Measurements	Channel power, Occupied bandwidth, X dB bandwidth, Adjacent channel suppression, IM3

Sweep speed	PXN-60
RBW = 250 kHz FPGA Spur Reject = Standard	>100 GHz/s

**DETECTION
ANAYLSYS/ZERO SPAN**

Highest Time Resolution	32 ns
Max. Analysis Bandwidth	25 MHz
Detector	Positive peak, Negative peak, Sampling, Average, RMS, Max Power

**REAL TIME
SPECTRUM ANALYSIS**

FFT Analysis	FFT engine is implemented in FPGA. Frame compression and trace detection are supported. No missing samples between FFT frames.		
	$\text{FFT frame update rate} = 10^9 \text{ ns} / (N * D * 8 \text{ ns}); \text{POI} = 2 * N * D * 8 \text{ ns}$ <p>N for FFT points (2048, 1024, 512, 256, 128, 64, 32) D for decimate factor (1, 2, 4, 8...)</p>		
	Typical Settings	FFT Refresh Rate	POI



	N = 2048, D = 1	15,258 times/sec	131.072 us
	N = 32, D = 1	976,563 times/sec	2.048 us
Max. Analysis Bandwidth	25 MHz		
Window Function	B-Nuttall, Flat-top		
RBW	3.68 MHz-3.59 kHz (Flattop window);1.95 MHz-1.90 kHz (B-Nuttall); 11 grades for each window type		
Amplitude Resolution	0.75dB		

GENERAL

Input and Output			
Power Supply	USB PD (20 V)		
USB Interface	USB3.0 Type-C*1, USB2.0 Type-C*1, USB2.0 Type-A*1		
Video and Audio interface	Micro HDMI*1 (Support for extended display), 3.5mm Headphone port*1		
External reference clock input	MMCX (F)(1), amplitude \geq 1.5 Vpp, input impedance 330 Ω		
External reference clock output	Integrated in MUXIO, 3.3 V CMOS, programmable on/off		
External trigger input	Type-C (3), 3.3 V CMOS, input: high impedance		
External trigger output	Type-C (3), 3.3 V CMOS		
RF input	N (F), Input impedance 50 Ω		
Analog IF Output	Unavailable		
Power Consumption	Typical 25 W		
Size (D * W * H) and weight	246x76x33 mm, \leq 1.4 kg 259.5x184.5x45.5 mm, \leq 1.5 kg (including protective shell and bracket)		
Operating Temperature	T0 Class (std.)	-10~50 °C	
Storage Temperature	T0 Class (std.)	-20~70 °C	
(ambient)			
Packaging and Accessories	Spectrum analyzer with protective shell*1, Power adapter*1, Power cable*1		

*Specification applies under the following conditions:

(1) Start up and warm up for 10 minutes

(2) Ambient temperature 25 °C

(3) Necessary heat dissipation is provided to ensure the ambient and core temperature within the rated range at the same time



OPTIONS

Code

01	Built-in OCXO reference clock	built-in hardware



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