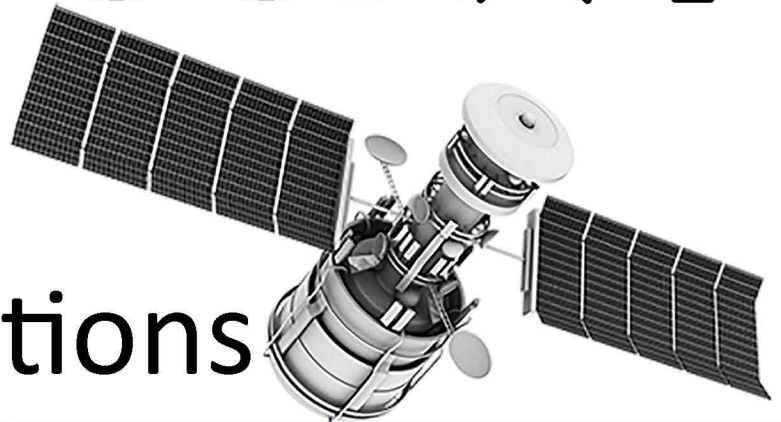


LPT-3000R^x4

Product Specifications



- * Digital Signal Processing Technology
- * Fits 19" 1-RU Rack Space
- * Built with 4, 8, or 16 Switchable RF Input Ports
- * 55 dB Port Isolation
- * 500 μ s Switching Speed
- * 310 μ s Sweep Time in Fast Mode



- * Built-in Carrier Identification Extractor (Optional)
- * Built-in C, KU, KA to L - band Down-converter (Optional)

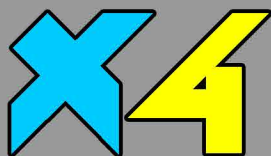
LPT-3000RX4 Specifications

The specifications apply when the LPT-3000RX4 is powered on for 45 minutes * to warm-up to a temperature of 20°C to 30°C, unless specified otherwise.

* 45 minutes typical, 90 minutes maximum

Frequency

Frequency			
	Range	9 kHz to 3.0 GHz	
	Resolution	1 Hz	
Frequency Reference			
	Accuracy	±(period since last adjustment X aging rate) + stability over temperature + supply voltage stability	
	Aging Rate	±1 ppm max.	1 year after last adjustment
	Frequency Stability over Temperature	±0.025 ppm	0 to 50 °C
	Supply Voltage Stability	±0.02 ppm	
Frequency Readout Accuracy			
	Start, Stop, Center, Marker	±(marker frequency indication X frequency reference accuracy + 10% x RBW + frequency resolution ¹)	
	Trace points	Max 601 points, min 6 points	
Marker Frequency Counter			
	Resolution	1 Hz, 10 Hz, 100 Hz, 1 kHz	
	Accuracy	±(marker frequency indication X frequency reference accuracy + counter resolution)	
		RBW/Span ≥0.02 ;	Mkr level to DNL>30 dB
Frequency Span			
	Range	0 Hz (zero span), 100 Hz to 3 GHz	
	Resolution	1 Hz	
	Accuracy	± frequency resolution ¹ RBW: Auto;	
Phase Noise			
	Offset from Carrier	Fc = 1 GHz; RBW = 1 kHz, VBW = 10 Hz; Average ≥ 40	
	10 kHz	<-88 dBc/Hz	Typical ²
	100 kHz	<-95 dBc/Hz	Typical
	1 MHz	<-113 dBc/Hz	Typical
Resolution Bandwidth (RBW) Filter			
	Filter Bandwidth	1 Hz to 1 MHz in 1-3-10 sequence 200 Hz, 9 kHz, 120 kHz, -6dB bandwidth 1MHz	
	Accuracy	± 8%, RBW = 1MHz ± 5%, RBW < 1MHz	Nominal ³ Nominal
	Shape Factor	< 4.5:1	Normal Bandwidth ratio: -60dB:-3dB
Video Bandwidth (VBW) Filter			



Filter Bandwidth	1 Hz to 1 MHz in 1-3-10 sequence	-3dB bandwidth
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[1] Frequency Resolution = Span/(Trace points - 1)

[2] Typical specifications in this datasheet mean that the performance can be exhibited in 80% of the units with a 95% confidence level over the temperature range 20 to 30 °C. They are not covered by the product warranty.

[3] Nominal values indicate expected performance. They are not covered by the product warranty.

Amplitude

Amplitude Range			
Measurement Range	100 kHz to 1 MHz	Displayed Average Noise Level (DANL) to 18 dBm	
	1 MHz to 10 MHz	DANL to 21 dBm	
	10 MHz to 3 GHz	DANL to 25 dBm	

Attenuator			
Input Attenuator Range	0 to 50 dB, in 1 dB step	Auto or manual setup	

Maximum Safe Input Level			
Average Total Power	≤ +27 dBm	Input attenuator ≥10 dB	
DC Voltage	± 50 V		

1 dB Gain Compression		
Total Power at 1st Mixer	> 0 dBm	Typical; Fc ≥ 50 MHz; preamp. off
Total Power at the Preamp	> -22 dBm	Typical; Fc ≥ 50 MHz; preamp. on
mixer power level (dBm)= input power (dBm)-attenuation (dB)		

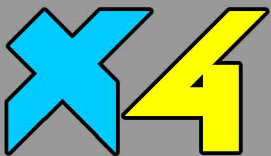


Displayed Average Noise Level (DANL) ⁴			
Preamp off	0 dB attenuation; RF Input is terminated with a 50Ω load. RBW 10 Hz; VBW 10 Hz; span 500 Hz; reference level = -60dBm; trace average ≥ 40		
9 kHz to 100 kHz	< -88 dBm		
100 kHz to 1 MHz	< -85 dBm - 3 × (f/100 kHz) dB	Nominal	
1 MHz to 10 MHz	< -117 dBm		
10 MHz to 3 GHz	< -117 dBm		
Preamp on	0 dB attenuation; RF Input is terminated with a 50Ω load ; RBW 10 Hz; VBW 10Hz; span 500 Hz; reference level = -60dBm; trace average ≥ 40		
100 kHz to 1 MHz	< -103 dBm - 3 × (f/100 kHz) dB		
1 MHz to 10 MHz	< -137 dBm	Nominal	
10 MHz to 3 GHz	< -137 dBm + 3 × (f/1 GHz) dB		

[4] DANL spec excludes spurious response.

Absolute Amplitude Accuracy			
Absolute Point	Center=160 MHz ; RBW 10 kHz; VBW 1 kHz; span 100 kHz; log scale; 1 dB/div; peak detector; 23±1°C; Signal at Reference Level		
Preamp off	± 0.3 dB	Ref level 0 dBm; 10 dB RF attenuation	
Preamp on	± 0.4 dB	Ref level -30 dBm; 0 dB RF attenuation	

Frequency Response			
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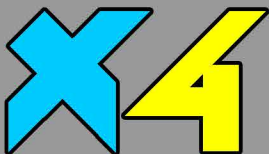
Preamp off	Attenuation: 10 dB; Reference: 160 MHz; 20 to 30°C	
100 kHz to 2.0 GHz	± 0.5 dB	
2GHz to 3 GHz	± 0.7 dB	
Preamp on	Attenuation: 0 dB; Reference: 160 MHz; 20 to 30°C	
1 MHz to 2 GHz	± 0.6 dB	
2 GHz to 3 GHz	± 0.8 dB	
Attenuation Switching Uncertainty		
Attenuator setting	0 to 50 dB in 1 dB step	
Uncertainty	± 0.25 dB	reference: 160 MHz, 10dB attenuation
RBW Filter Switching Uncertainty		
1 Hz to 1 MHz	± 0.25 dB	reference : 10 kHz RBW
Level Measurement Uncertainty		
Overall Amplitude Accuracy	± 1.5 dB	20 to 30°C; frequency > 1 MHz; Signal input 0 to -50 dBm; Reference level 0 to -50 dBm; Input attenuation 10 dB; RBW 1 kHz; VBW 1 kHz; after cal; Preamp Off
	± 0.5 dB	Typical
Spurious Response		
Second Harmonic Intercept		Preamp off; signal input -30dBm; 0 dB attenuation
	+35 dBm	Typical; 10 MHz < fc < 775 MHz
	+60 dBm	Typical; 775 MHz ≤ fc < 1.5 GHz
Third-order Intercept		Preamp off; signal input -30dBm; 0 dB attenuation
	> 1dBm	300 MHz to 3 GHz
Input Related Spurious	< -60 dBc	Input signal level -30 dBm, Att. Mode, Att=0dB; 20-30°C
Residual Response (inherent)	<-90 dBm	Input terminated; 0 dB attenuation; Preamp off

RF Port Characteristic

Channel Performance		
Channel Frequency Response	± 1 dB	Reference: port 1, zero span
Switching Time	0.5 ms	without sweep time
Isolation	55 dB	

Sweep

Sweep Time		
Range	310 μ s to 1000 s	Span > 0 Hz
	50 μ s to 1000 s	Span = 0 Hz; Min Resolution = 10 μ s
Sweep Mode	Continuous; Single	
Trigger Source	Free run; Video; External	
Trigger Slope	Positive or negative edge	



RF Preamplifier

Frequency Range	1 MHz to 3 GHz	
Gain	18 dB	Nominal (installed as standard)

Front Panel Input/Output

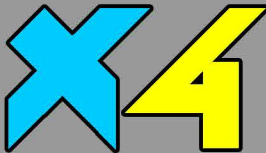
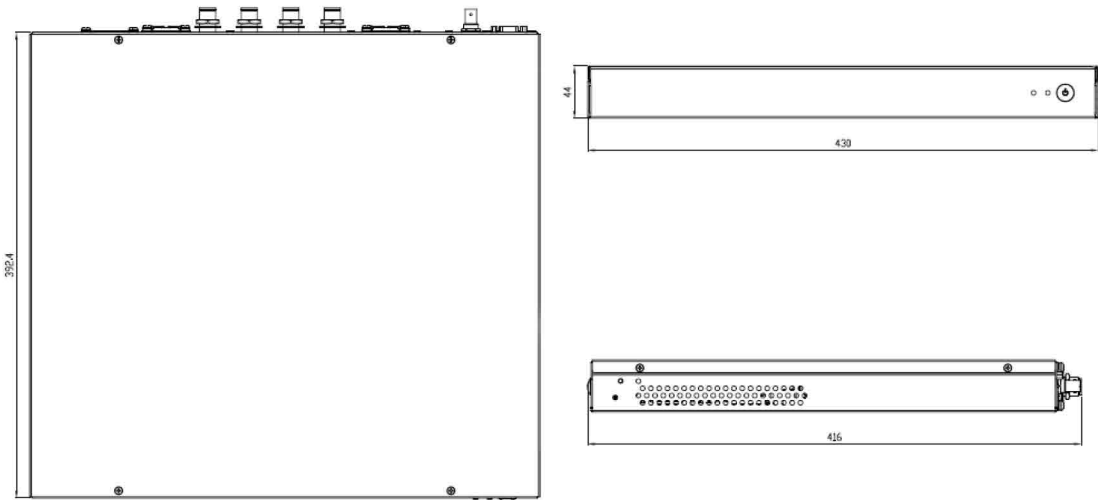
Power LED	
Power on mode	yellow

Rear Panel Input/Output

RF Input		
Connector Type	4-port N-type female	
Impedance	50 ohm	Nominal
VSWR	< 2.1 :1	300 kHz to 3 GHz; Input attenuator ≥ 10 dB
Reference Input		
Connector Type	BNC female	
Input Reference Frequency	10 MHz	
Input Amplitude	-5 dBm to +10 dBm	
Frequency Lock Range	Within ± 5 ppm of the input reference frequency	
RS232 Interface		
Connector Type	D-sub 9-pin female	Tx,Rx,RTS,CTS
LAN TCP/IP Interface		
Connector Type	RJ-45	
Base	10Base-T; 100Base-Tx; Auto-MDIX	
AC Power Input		
Power Source	AC 100 V to 240 V, 50 / 60 Hz	Auto range selection

General

Internal Data storage	16 MB nominal	
Power Consumption	<65 W	
Warm-up Time	>45 minutes	
Temperature Range	+5 °C to +45 °C	Operating
	-20 °C to + 70 °C	Storage
Weight	8.16 kg (17.99 lb)	Basic
Dimensions	416x430x44 (mm)	Approximately
	16.38x16.93x1.73(in)	





Spectrum Monitoring made EASY

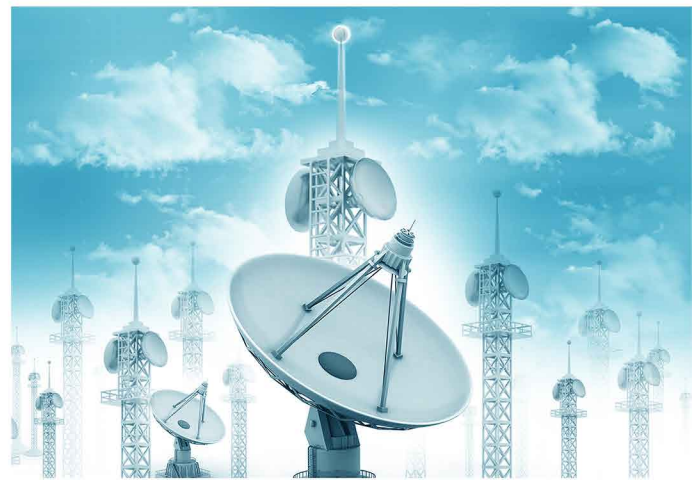
The LPT-3000RX4 was built for spectrum monitoring software, such as LP Technologies Automatic Spectrum Monitoring (LPT-ASM), the most effective and affordable carrier monitoring solution in the satellite industry. Using the LPT-3000RX4's multiport capability, operators can collect critical data fast while performing robust measurements with accuracy.

The LPT-3000RX4 is also compatible with several other monitoring systems on the market.

Measuring Signals with PRECISION

The LPT-3000RX4 remote spectrum analyzer is designed to fulfill all of your requirements with functionality, ease of use, and affordability in mind.

Experience clean, fast, and accurate trace data with 17 RBW and VBW filters ranging from 1 Hz to 1 MHz in a 1-3-10 step sequence.



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