PSA-4400
POWER SPECTRUM ANALYZER

DATA SHEET

Spectrum Analysis for Power Line Carrier & Audio Tone Protection

INTRODUCTION

The PSA-4400 Power Spectrum Analyzer was specifically designed to support Electric Utility System Protection applications. It is the first spectrum analyzer capable of measuring over 100 watts of power with no additional external devices required. It is also the only Spectrum Analyzer with selectable impedances of 50, 75 & 600 Ohms terminated, as well as having a high impedance mode for bridging measurements. The spectrum analyzer is configurable to operate in either Discrete Fourier Transform (DFT) or Swept mode.

With a frequency range of 10 Hz to 5 MHz it is ideal for checking the integrity of your audio tone or power line carrier protection communication path. Features like the “as left reference overlay” can help the user quickly identify changes to the path, at any time in the future, that may include noise intrusion or new frequencies that can adversely affect the protection channels.

The PSA-4400 output generator is not only a tracking generator, but was also designed to simulate typical teleprotection transmitters. The generator output is capable of up to 1 watt into 50 or 75 ohms and can also produce two independent frequencies to simulate dual transfer trip applications. The 600 Ohm setting is ideal for audio tone protection applications. In addition, the outputs and FSK functionality can be programmed for unlimited variations of one or both frequencies to help test the alignment and integrity of the receiver(s) settings and logic.

SPECIFICATIONS

GENERAL

Frequency Range	10 Hz to 5 MHz
Frequency Accuracy	±3ppm, ±5ppm max for 10 years
Frequency Temperature Stability	±1.5ppm
Frequency Resolution	1 Hz
Frequency Display Resolution	7 Digit
Analysis Bandwidth	500 Hz, 5 kHz, 50 kHz, 500 kHz, 5 MHz
Resolution Bandwidth (RBW)	DFT: 1 Hz to 1 MHz SWEPT: 10 Hz to 3 kHz
Display Points	300 Max
Swept Time	10 Hz, 20 sec 30 Hz, 10 sec 100 Hz, 4sec 300 Hz, 2 sec 3 kHz, 1 sec 1 kHz, 1 sec
Amplitude Accuracy	± 0.5 dBm
Ref Level	+99 dBm to -99 dBm
Scale/Div	10, 5, 2, 1 dB / division
Input Ranges	100V, 30V, 10V, 3V, 1V, 300 mV, 100 mV, 30 mV, 10 mV, 3 mV, 1mV
Ref Z	1 Ω to 999 Ω
Marker Readout	Frequency 7 digit resolution Level 4 digit resolution

INPUTS

Unbalanced

Connector Type	BNC
Impedance	50 Ω, 75 Ω or High Impedance (< 1.75Vp 1MΩ; > 1.75Vp 40KΩ)
Level	10 Hz to 5 MHz 125 Vrms max (176 Vp max) 100 Vdc max. 50 Ω or 75 Ω (12 Watts)

Balanced

Connector Type	Banana Jack
Impedance	600 Ω or High Impedance (1M Ω)
Level	10 Hz to 300 kHz 7.07 Vrms max (10Vp max) 10 Vdc max. 600 Ω (1 Watt)

OUTPUT GENERATOR

Connector Type	BNC (Unbalanced)
Amplitude Accuracy	± 0.1 dB
Tuning Accuracy	1 Hz
Display	dBm & VRMS
Impedance	50 Ω, 75 Ω & 600 Ω
Level	50 Ω / 75 Ω: 7.07 Vrms (1 Watt) to 1 mVrms 50 Ω / 75 Ω / 600 Ω : 3.535 Vrms (0.25 Watt) to 1 mVrms
Frequency Range	50 Ω / 75 Ω: 30 kHz to 1 MHz 50 Ω / 75 Ω / 600 Ω: 10 Hz to 5 MHz

TRIGGER

Source	Auto, Button, or External
Length	> 50 us
External Level Threshold	Low to High Transition: 2.4 V High to Low Transition: 0.7 V

COMMUNICATION PORTS

USB	Type B, 12 Mbps (v2.0)
Ethernet	RJ-45, 10BASE-T / 100BASE-TX

ENVIRONMENTAL

Temperature Range	-20°C to +60°C
Relative Humidity	95% Max, non-condensing @ +40°C (104°F)

ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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