Harmonics and Flicker
ISO17025 Certified Test Solutions
IEC61000-3-2/IEC61000-3-3
IEC61000-3-11/IEC61000-3-12

Precision Power Analyzer

PPA5531   KinetiQ

Fully Compliant Harmonics and Flicker Test Solutions

|	
Leading wideband accuracy	Basic 0.01% with class leading high frequency performance
ISO17025 accredited	ISO17025 IEC61000 certification available
Sophisticated data reporting	Enables user to determine failure modes accurately
PC software	Remote control, tables, graphs and database management of results
Impedance Network	N4L Impedance Networks available for compliant measurements
Versatile interfaces	RS232, USB, GPIB and LAN as standard
1 to 3 Phase	Ability to perform single and 3 phase measurements
Various measurement modes	Power, Harmonic, RMS, LCR, Scope, Integ

IEC61000-3-2/12 - Fluctuating Harmonics

The N4L PPA55xx series of power analyzers and impedance networks provide fully compliant Harmonics and Flicker test solutions. Certified by NPL (National Physical Laboratory) in the UK, the N4L PPA55xx provides reliable, accurate measurements compliant to the latest standards (IEC61000-3-2/3 and IEC61000-3-11/12)

In combination with an N4L Impedance Network and a compliant AC Source, you will be equipped to provide fully compliant Harmonics and Flicker measurements.

Intuitive software package
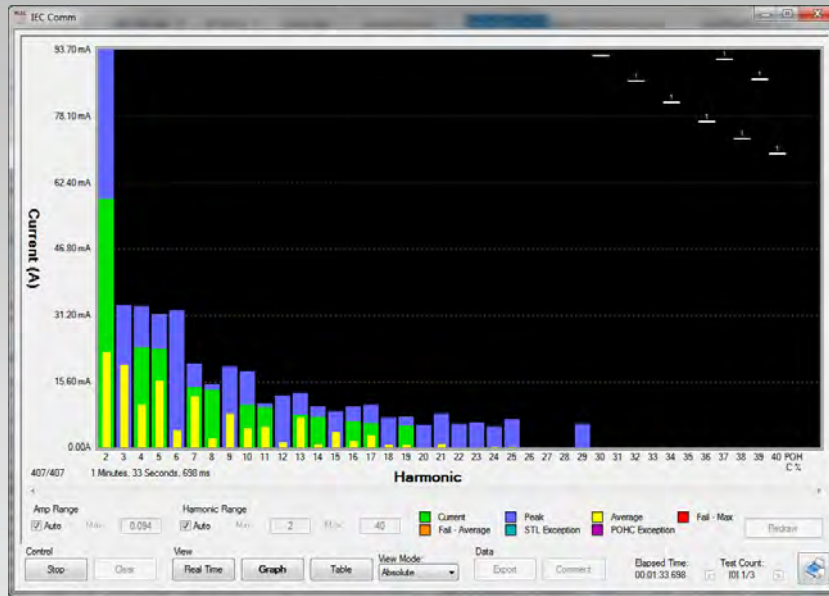
IECSoft IEC61000 Software is included with every instrument and presents the data acquired by the Power Analyzer in an easy to interpret way in order to enable swift and accurate diagnosis of the failure mode of a DUT. With the ability to "Rewind" time the user can scroll back through the test period in order to analyze events in more detail.

Perform compliant IEC61000 tests in 6 steps, following intuitive software guidance (IECSoft)

Step 1 Begin New/Load Existing test

Step 2 Enter EUT/Test Lab details

Step 3 Select Harmonics/Flicker
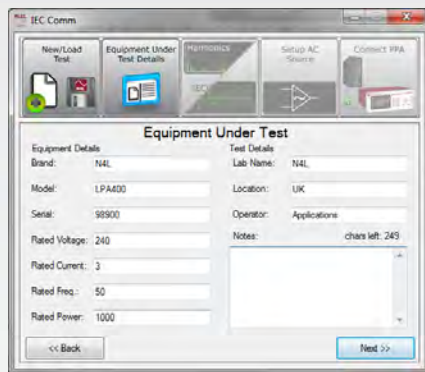
Step 4 Setup Harmonics/Flicker

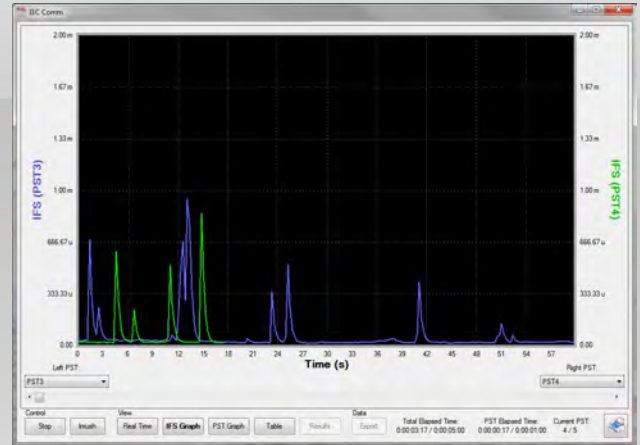**Step 5** Setup AC Source
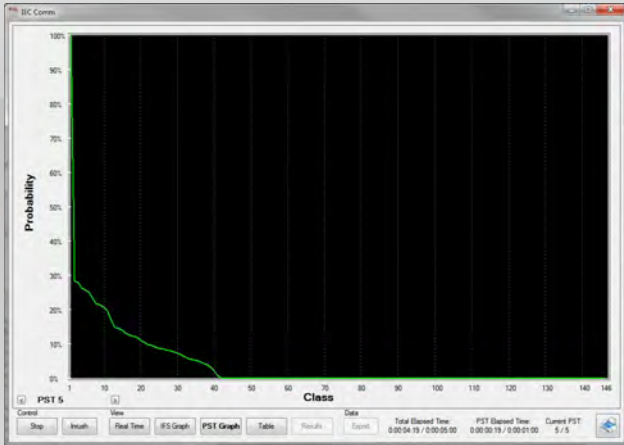

Step 6 Connect and begin tests
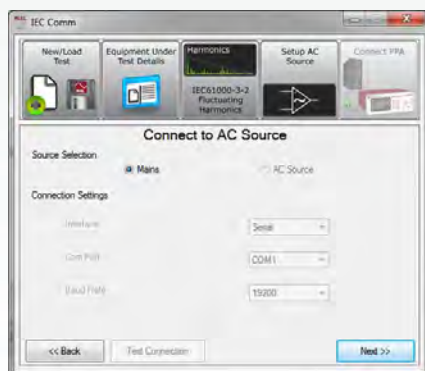
IEC61000-3-3/11 - Flicker

Using the same setup process as described for Fluctuating Harmonics, Flicker is quickly configured and measurements can commence. Both IFS and PST are graphed for reference.

PST Graphical Display

IFS Graphical Display

Switched Inrush Current testing

IECSoft includes an integrated "Inrush test user prompt" program, this provides the operator with a prompt to perform the switching operation of the device under test, records Dmax values with a running average and final result. The software will also auto calculate the results as per IEC61000-3-3:2013 ed.3.0.
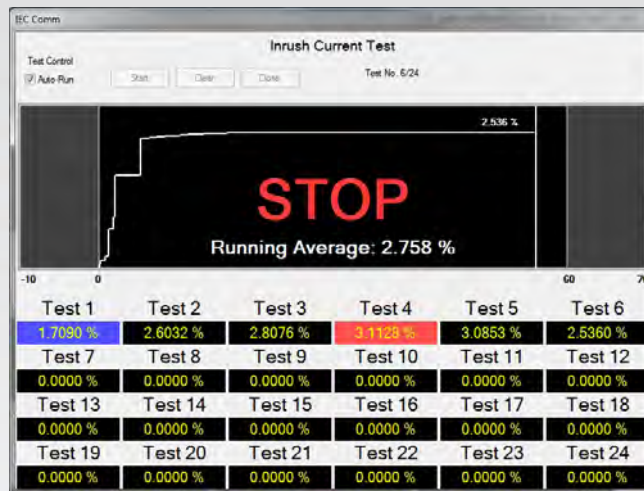
Fully Automated Report Generation

Along with sophisticated test failure diagnosis, IECSoft includes an automatic report generator presenting detailed test results.

POWER ANALYZER SPECIFICATION

	PPA55x1
Frequency Range	
	DC,10mHz ～ 1MHz - PPA55x1 - Low Impedance Shunt (50Arms)

Voltage Input			
Internal	Range	300mVpk ～ 3000Vpk(1000Vrms) in 9 ranges (240Vrms within 300Vpk range, using 20% over range)	
	Accuracy	0.01% Rdg+0.038% Rng+(0.004%×kHz)+5mV	
External	Range	300µVpk ～ 3Vpk in 9 ranges【BNC connector 3Vpk max input】	
	Accuracy	0.01%Rdg+0.038%Rng+(0.004%×kHz)+3µV	

Current Input			
	Low Impedance (Fully Compliant) 3mΩ Max 50Arms	Ranges	100mApk ～ 1000Apk(50Arms) in 9 ranges
		Accuracy	0.01% Rdg+0.038% Rng+(0.004%×kHz)+ 900µA
External input (External shunt Current sensor)	BNC Connector (Max input 3Vpk)	Ranges	300µVpk ～ 3Vpk in 9 ranges
		Accuracy	0.01% Rdg+0.038% Rng+(0.004%×kHz)+ 3µV

Phase Accuracy
0.005deg+(0.01deg×kHz)【PPA5500-LC(10Arms), PPA5500(30Arms)】 0.01deg+(0.02deg×kHz)【PPA5500-HC(50Arms)】

Power Accuracy	
	[0.03%+0.03%/pf+(0.01%×kHz)/pf] Rdg+0.03%VA Rng
40-400Hz	[0.03%+0.03%/pf+(0.01%×kHz)/pf] Rdg+0.02%VA Rng

General	
Crest Factor	20(Voltage and Current)
Sample Rate	2.2Ms/s on all channels, No-Gap
IEC Modes	IEC61000 Harmonics and Flicker (PPA5500), IEC62301 Standby Power
Application Modes	PWM Motor Drive, Ballast, Inrush, Power Transformer, Standby Power, Fluctuating Harmonics, Flicker Meter

CMRR - Common Mode Rejection Ratio	
	250V @ 50Hz - ≥ 1mA (150dB)
	100V @ 100kHz - ≥ 3mA (130dB)
Operating Conditions	5˚C to 40˚C Ambient Temperature (or air intake temperature when rack mounted), 20-90% Non-Condensing Relative Humidity. Temperature coefficient ±0.01% per ˚C of reading at 5-8˚C and 28-40˚C

Measurement Parameters
W, VA, Var, pf, V & A - rms, rectified mean, AC, DC, Peak, Surge, Crest Factor, Form Factor, Star to Delta Voltage
Frequency (Hz), Phase (deg), Fundamentals, Impedance
Harmonics, THD, TIF, THF, TRD, TDD
Integrated Values, Datalog, Sum and Neutral values

Datalog - Up to 4 user selectable measurement functions (60 with optional PC software)	
Datalog Window	No-Gap analysis, Minimum window 2ms
Memory	10M records into flash RAM (Non-Volatile)

Communication Ports	
RS232	Baud rate up to 38.4kbps, RTS/CTS flow control
LAN	10/100 Base-T Ethernet auto sensing
GPIB	IEEE488.2 compatible
USB	USB 2.0 and 1.1 compatible
Analogue Output	Bipolar ±10V(BNC)
Speed Input	BNC Bipolar±10V or Pulse count 1Hz to 1MHz 0.01% Rdg
Torque	BNC Bipolar±10V or Pulse count 1Hz to 1MHz 0.01% Rdg
Sync	4 ～ 6 Phase measurement (Master/Slave)
Extension	4 ～ 6 Phase (Master/Slave) + Auxiliary

Standard Accessories	
Leads	Power, RS232, USB, GPIB
Connection Cables	36A 1.5m long 4mm stackable terminals 1x red, 1x yellow and 2x black per phase (1x red, 1x black with HC version)
Connection Clips	4mm terminated aligator clips - 1x red, 1x yellow and 2x black per phase (1x red and 1x black per phase with PPA5500-HC version)
CD-ROM	IECSoft, CommView2 (RS232/USB/LAN), Command line, Script based communication software
Documents	User manual, Communications manual, Calibration certificate, Quick start guide

Mechanical/Environmental	
Display	320×240 dot full colour TFT, White LED Backlit
Dimensions	130H×400W×315D mm excluding feet
Weight	5.4kg(1 Phase), 6kg(3 Phase)
Safety Isolation	1000Vrms or DC(CATII), 600Vrms or DC(CATIII)
Power supply	90 ～ 265Vrms, 50 ～ 60Hz, 40VAmax

IMPEDANCE NETWORK SPECIFICATION

	IMP161/3(16Arms) , IMP321/3(32Arms) and IMP753(75Arms) models available
Compliance	
IMP161/3	Fully Compliant to IEC61000-3-3
IMP321/3 & IMP753	Fully Compliant to IEC61000-3-11
Impedance Specification	
	$R_A = 0.24\Omega$ $jX_A = 0.15\Omega$ @ 50Hz $R_N = 0.16\Omega$ $jX_N = 0.10\Omega$ @ 50Hz
Current Rating	
IMP16x	Max 16Arms
IMP32x(753)	Max 32Arms(75Arms)

IMP753 Three Phase Impedance Network

All specifications at 23˚C ± 5˚C . These specifications are quoted in good faith but Newtons4th Ltd reserves the right to amend any specification at any time without notice

Newtons4th

Newtons4th Ltd (abbreviated to N4L) was established in 1997 to design, manufacture and support innovative electronic equipment to a worldwide market, specialising in sophisticated test equipment particularly related to phase measurement. The company was founded on the principle of using the latest technology and sophisticated analysis techniques in order to provide our customers with accurate, easy to use instruments at a lower price than has been traditionally associated with these types of measurements

Flexibility in our products and an attitude to providing the solutions that our customers really want has allowed us to develop many innovative functions in our ever increasing product range

Contact your local N4L Distributor for further details

Newtons4th Ltd are ISO9001 registered, the internationally recognised standard for the quality management of businesses

In recognition of the technical innovation and commercial success of the PPA series, N4L received the "Innovation 2010" Queen's award for enterprise

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