Standby Power Consumption Measurement Software

For IEC 62301 ed 2.0 and EN 50564:2011

To support the conservation of energy, Yokogawa offers test and measurement technologies focusing on the challenges related to energy conservation, efficiency and sustainability.

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Power Consumption Measurement Software

The power consumption measurement software together with a WT power meter offers trustworthy power measurement solutions to test household and office products for standby and off power modes. The solution enables products to be tested according to IEC62301 Ed.2.0 (Household electrical appliances – Measurement of standby power) and EN50564:2011 (Electrical and electronic household and office equipment -Measurement of low power consumption). The software offers a user friendly interface to improve the user's productivity.

WHY YOKOGAWA?

- Yokogawa, with almost 100 years of expertise in power measurement, is the market leader and trusted provider for the widest possible range of power measurement solutions. The measurement accuracy of all Yokogawa power meters is specified over the entire measurement range from 1% to 110%, for the WT500 and WT1800, and to 130% for the WT210, WT310 and WT3000.
- The software is easy to install and use with minimum training needs. The Standby/Off mode power measurements are carried out using easy to navigate software which can automatically complete the test in the shortest possible time.
- The software can generate test reports along with raw test data (.CSV file format). Users can benefit by using the test report to support their product testing and use the raw data to verify the test results.
- Yokogawa Europe supports its powermeter users via its own standards laboratory and is the only industrial (i.e. non-government or national) organisation to offer traceable power calibration, to national and international standards, at frequencies up to 100 kHz, which is required for higher harmonics measurement. The exceptional capabilities at high frequencies and low power factors ensure that customers can trust their measurements and meet the requirements of quality standards such as ISO9000.

✔User friendly interface

✔Automatic or manual mode selection

✔No user calculations required

✔Printable test report

WT1800 Precision Power Analyser

WT3000 Power Analyser

Communication Interface with Digital Power Analysers

	GP-IB	Ethernet	USB	RS-232
WT210	√			√
WT310	√	√	√	√
WT500	√	√	√	
WT1600	√	√		√
WT1800	√	√	√	
WT3000	√	√	√	√

WT500 Compact Power Analyser

WT310 Digital Power Meter

WT210 Digital Power Meter

For more product information: http://tmi.yokogawa.com/products/digital-power-analyzers

The interpretation, calculation and implementation to comply with the IEC or EN standards can be a complex and time consuming process for users. Yokogawa's power consumption measurement software offers users a simple and easy-to-use interface to carry out the standby power measurements according to the international standards. The software measures all the key parameters such as Total Harmonic Distortion (THD), waveform crest factor, voltage, frequency, power variations and accumulated energy along with apparent power and power factor. These measured values are then consolidated into a readily usable report.

The key requirements of the IEC 62301 Ed.2.0 and EN 50564:2011 standards:

IEC/EN

The total harmonic content of the supply voltage when supplying the product under test in the specified mode shall not exceed 2 % (up to and including the 13th harmonic). The value of the harmonic content and voltage supply shall be recorded during the test and reported.

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The THD is measured and displayed directly with the WT3000, WT1800, WT500 & WT310. For the WT210, the software calculates the THD by using the fundamental and harmonic data of the 2nd to the 13th orders.

IEC/EN

The sampling method is the recommended approach for all measurements under the international standard. Is this supported by the software? The other methods used are average reading method and direct meter reading method.

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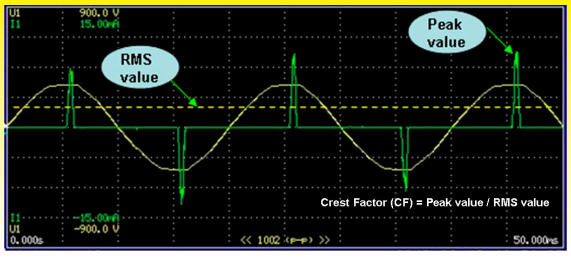
The PCM software offers both the sampling method and the average reading method. The sampling method provides the fastest test method when the power is in stable mode. The first one third of the total measurement period is discarded and the second two thirds are used to determine the stability. The user has the flexibility to operate the PCM software in auto mode, where the software runs all the algorithms as per the priority list, or in manual mode where the software runs the algorithms as per the user's selection.

IEC/EN

A key characteristic of the load used to determine the maximum permitted measurement uncertainty is the Maximum Current Ratio (MCR). It is the ratio between the crest factor (CF) of the current waveform and the power factor (PF). According to Annex D of the IEC 62301 Ed 2.0 and EN 50564:2011 standards, the permissible absolute uncertainty is 0.026 W. Is this condition satisfied?



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Following the sample calculations as per Annex D of the standards, at low power factor PF = 0.1 and high crest factor CF = 3, the absolute uncertainty of the WT210 Yokogawa power meter is 0.0119. Thus Yokogawa's entry level WT210 satisfies the uncertainty conditions of the standards.

IEC/EN

The ratio of peak value to R.M.S. value of the test voltage (i.e. crest factor) when supplying the product under test shall be between 1.34 and 1.49.

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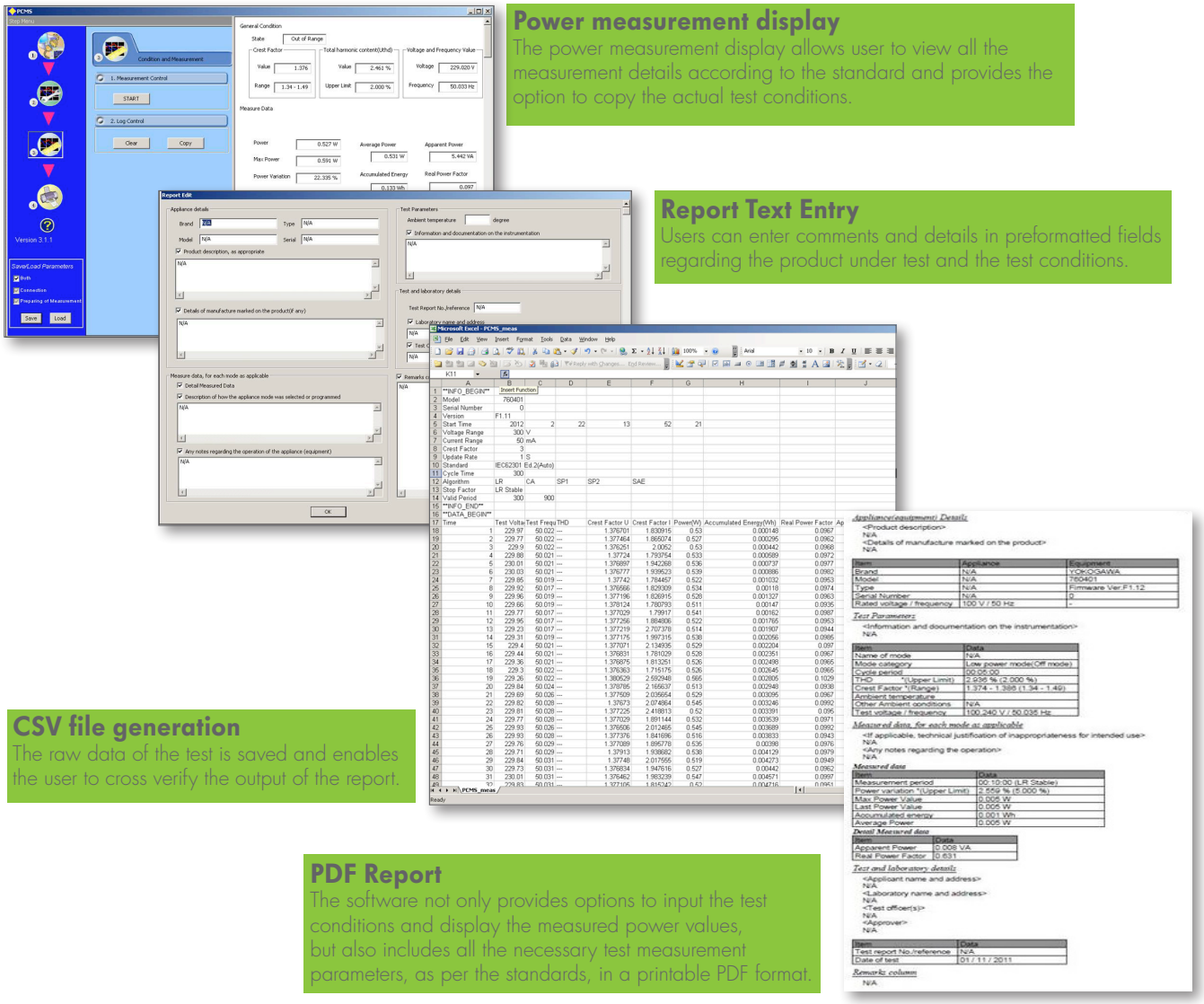
Yokogawa's solution displays the voltage crest factor on the screen and in the .CSV report.



Power measurement display

The power measurement display allows user to view all the measurement details according to the standard and provides the option to copy the actual test conditions.

Report Text Entry

Users can enter comments and details in preformatted fields regarding the product under test and the test conditions.

CSV file generation

The raw data of the test is saved and enables the user to cross verify the output of the report.

PDF Report

The software not only provides options to input the test conditions and display the measured power values, but also includes all the necessary test measurement parameters, as per the standards, in a printable PDF format.

Specification	
System Requirements	PC
• CPU	Pentium 4 1.5 GHz or higher (recommended)
• Memory	512 MB or more (recommended)
• HDD	500 MB or more of free space
Operating System	
An English version of Microsoft Windows: Windows XP, Windows Vista, or Windows 7	
Communication Port	
• GP-IB	N.I. (National Instruments) PCIe-GPIB, PCI-GPIB, PCI-GPIB+, PCMCIAGPIB, or PCMCIA-GPIB+ with driver NI-488.2 version 1.60 or later (however, version 2.3 is not supported)
• RS-232	An available COM port on the PC
• Ethernet	10BASE-T or 100BASE-TX Ethernet port
• USB	A USB revision 1.1 or later USB port
Display, Printer, and Mouse	
Devices supported by the operating systems listed above	

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