Unsolicited Customer Review

Customer Background:
Electronic equipment design & repair for 40+ years; owns several TEK scopes, ranging
from a ~15 MHz TEK 515A to a 350 MHz TEK 485. Has also used TEK Digital
Phosphorous scopes, and various HP digital scopes.

OWON PDS5022 Scope Review

Apr 23, 2009

General performance: gives good rendition of waveform on both channels. Triggers
well on sine wave up to ~ 50 MHz. Time base range is from 5 nsec/div to 100 sec/div.
Vertical position range is +/- 10 div from center.   For someone with reasonable
familiarity with scopes, particularly DSO's, most buttons/functions are intuitive.

In sample mode, will see some noise on traces, with peak detect mode, see ~three pixels
wide trace, and with average (16) mode, see flat (single pixel width) trace.
Channel 2 has slightly more noise and offset than channel one does. Offset shows up
when invert on/off is toggled; improves some when calibration is performed.

Probes are 1X/10X 60MHz, and seem to be good quality.

Frequency Response: Fed signal from RF generator into both channels via coax (not
thru probes).   Displayed trace represents sine wave past the 25 MHz BW, will approach
50 MHz (Nyquist point).   Above 50 MHz, displayed trace aliases and indicates
decreasing frequency as actual frequency increases (up to ~75 MHz).

Pulse response: Fed pulse from a TEK PG 501 into 50 ohm terminator on scope input.
Can view a 30-50 nsec wide pulse occurring on ~300 usec interval. With time base set to
100 usec/div, using peak detect, get good indication of each occurring pulse, even with
trigger mode on SINGLE. At 50 nsec/div, pulse has waveshape consistent with ~14 nsec
risetime; i.e. rounded, but appears as a pulse.

XY mode: Fed signal from RF generator into both probes. Tried both X1 & X10 probe
settings. Get closed 45 degree line up to 20+ MHz with both probes set to same
attenuation, get opening at high frequencies if one probe set to 1X and other set to 10X.

View of pre & post trigger expanded portions of trace: With stopped trace, can set
window and expand any section of trace to right of trigger point. Can expand by factor of
~100 and see reasonable representation of signal. For retrigger of signal, get full
horizontal resolution trace of windowed area.
For pre-trigger area, can only expand to cover what will still include the trigger on
screen. This limits detailed examination of pre-trigger area. (note: can expand any
portion of trace when viewed on PC)

Measure function: For vertical measurements, on MEAN or P-P, has 40 millivolt resolution on a 1v/div range. On RMS, has 1 mv resolution on the 1v/div setting. Frequency is 4 digit readout, and will measure frequency from ~5 Hz to ~40 MHz.   If a 5 MHz square wave (200 nsec period) is viewed with horizontal set to 100 msec/div (200 usec/sample; see nothing on trace due to display aliasing), MEAS still correctly indicates the amplitude and frequency of the 5MHz input.   This helps avoid or missing high frequency activity when using low sweep speeds.

Cursor: Can have either none, time, or voltage cursors. Indicates cursor position and delta of the two cursors. Time cursors also indicate equivalent frequency, assuming one cycle of signal is between the two cursors. Allows easy measuring of dominant ringing frequency on a pulse edge.

Stored waveforms: Can store trace from channel 1 or 2 to A, B, C, or D memories (only tried A). Can recall and display the stored trace, but can not manipulate it, MEAS it, or expand it. Have not found a way to erase stored waves.

Autoset: seems to work adequately; sets time base to display ~ 4-5 cycles on screen, trigger to ~50% of p-p.

Acquire & display modes: appears persistence, average, peak detect, work as advertised.

OWON scope to PC

DS Wave software: Can import traces via USB to scope. (Need to turn scope on before connecting USB cable. Supplied USB cable is only ~2' long, changed to 10' one.)
Can view images in DS Wave, can manipulate/expand, etc. and print. Printed info includes various parameters (ch 1 & 2 setting, time base, MEAS values, etc.)
Can copy .bmp file as image into Word; get only the grid with traces, do not get any parameters listed.
Can also transfer the .bin data file to Excel where typical Excel data manipulation and charting can be performed. Data file is 5000 points.

1. Turn Scope on before connecting USB cable to PC.
2. Open "DS Wave" software.
      Can view scope images, etc. in DS Wave without saving to file.

3. To print, VIEW > change background to white first.   Prints graph, with settings & parameters.

4. To paste graph into Word:
In DS Wave, File > Save Image > name as xxxxx.bmp (window with files closes) > OK
      File > Save Image; Rt clk on xxxxxxx.bmp > copy; > cancel
      Open Word doc; paste image in (cntl v)
Get only scope graph, no settings / parameters, etc.

5. To move data file to Excel:

In DS Wave, "Get Data" > START; (stores file as xxxxx.bin) > close this box
        VIEW > Data Table > Save as "create name.xls" > OK > Exit
        Go to Excel; File > Open > double click on selected file.

        (file is in C:\Program File\OWON\DS_Wave\examples\create name.xls)