

HBM Waveform Analyzer

The ORYX's HBM-MM Waveform Analyzer (EvaluWave) is a software program designed to help in the analysis of HBM and MM generated waveforms. The software accepts a waveform data file in either CSV (Comma Separated Values) format or native Tektronix WFM waveform format. Most digital scopes have the ability to save waveforms in digital form on a computer file format. Once the waveform has been captured, this software can be used to perform a quick analysis.

The HBM-MM Waveform analyzer automates the analysis of HBM Waveform for JEDEC and ESDA standards analysis. The software draws lines and scans numeric data to determine the following parameters:

1. Rise Time
2. Peak Current
3. Decay time
4. % ring

SOFTWARE USE

Opening screen

The software is designed to be highly intuitive and its interface has been designed for ease of use. After starting the executable file the user is presented with the following screen:

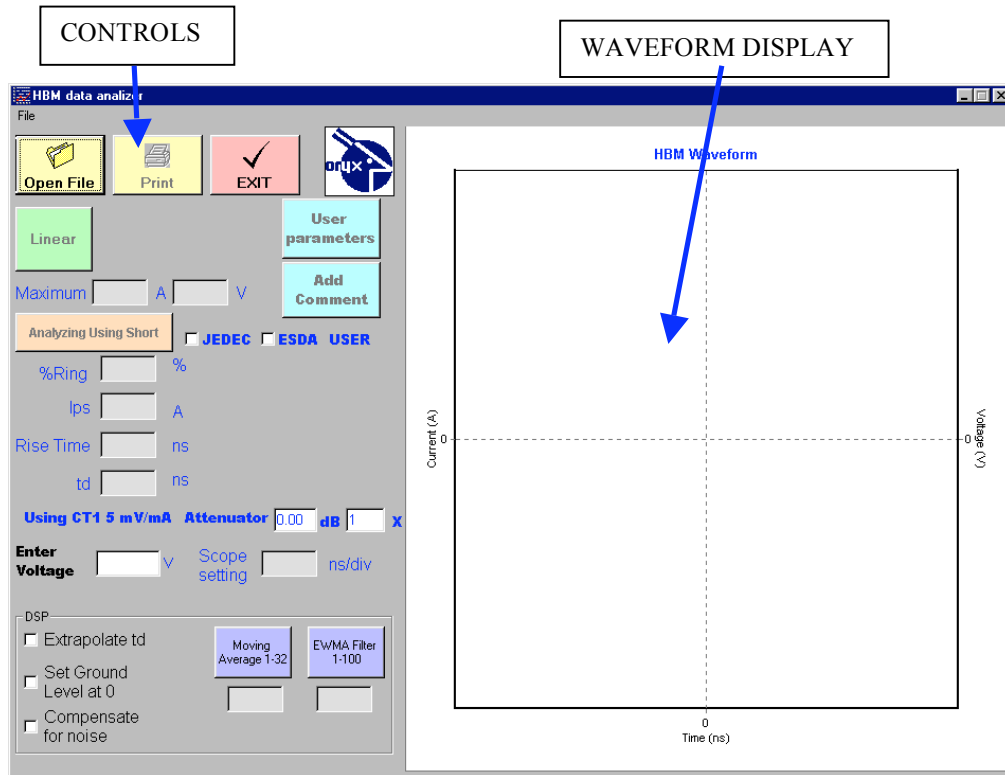


Figure-1. HBM Waveform analyzer opening screen

COMMANDS

Open File: Press this button to open a data file containing the information of the file to be analyzed.

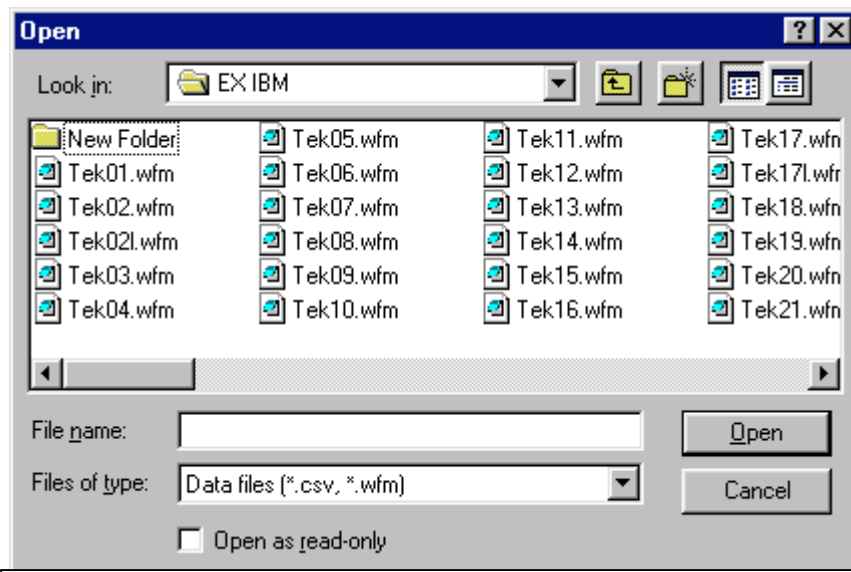


Figure2. File Open screen. Select the WFM of CSV file from this screen

Linear. Press this button to start the analysis of the waveform for ESDA and JEDEC standards.

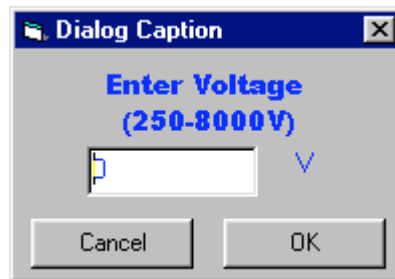


Figure 3. When the Linear button is pressed, the system asks for a voltage to perform calculations.

When invoked, the linear command asks for the voltage at which the waveform was acquired. Enter the voltage to display the analysis of the waveform..

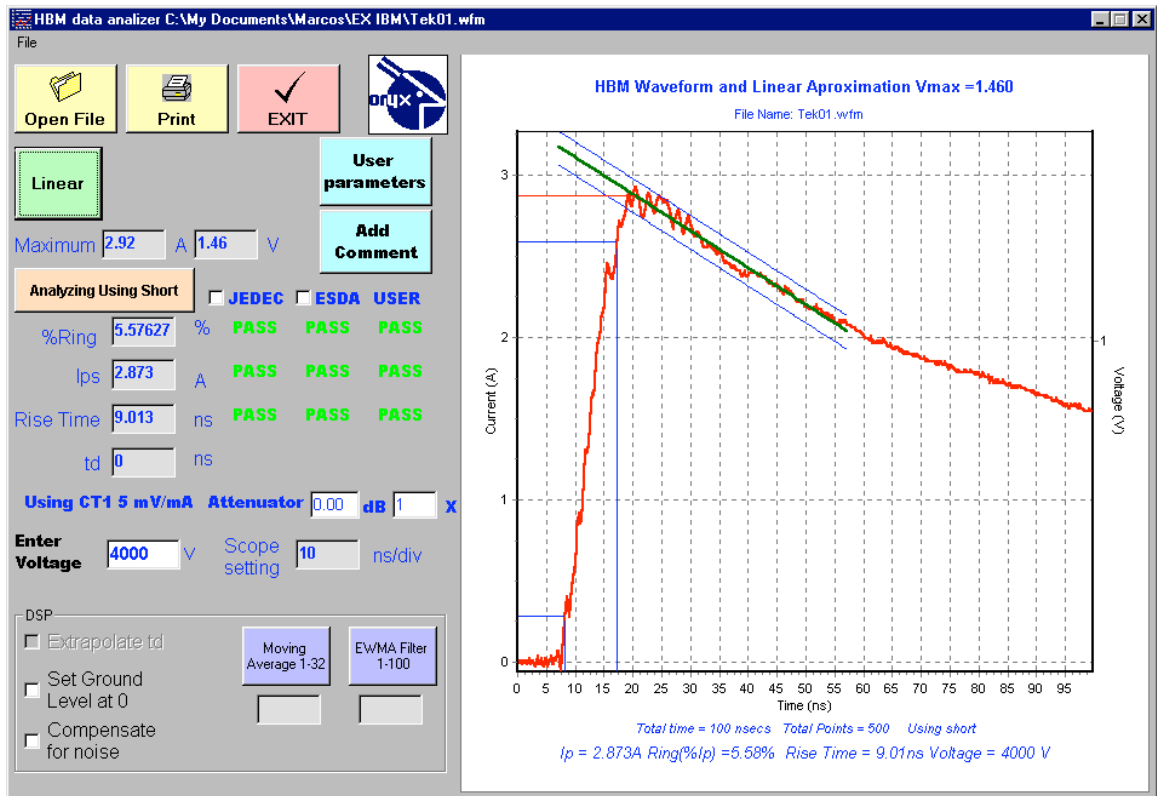


Figure 4. Waveform analysis of a typical HBM Waveform.

Note that if the acquisition time is long enough, the software will determine the decay time of the waveform. If the acquisition time is not long enough, the decay time is not reported.

Print. Press this button to print the waveform to the default printer.

EXIT. Use this button to exit the HBM Waveform analyzer software. You may also press the X button on the upper right corner of the screen to exit the application.

ADVANCED FEATURES

Set Ground Level at Zero: This function calculates the offset of the waveform with reference to ground and compensates all values of the waveform.

Compensate for Noise. This feature is helpful when waveform that have excessive noise are taken. The % ring calculated takes the peak-to-peak value of the noise and subtracts it from the actual calculation when this option is selected.

Moving Average Filter. This filter is applied to the waveform to help eliminate noise. This filter is not intended to be use for JEDEC or ESDA standards. The maximum value of the filter (Number of points to use in the moving average) is 32.

EWMA. The Exponentially Weighted Moving Average filter is also known as the alpha-beta filter and can have a value from 0 to 100. Best results for noise elimination are at 70 to 95. The use of this filter is not intended for JEDEC or ESDA standards.

File-Batch Processing. The batch processing command of the software is accessed through the File-Batch processing menu item. This command is useful when processing of multiple files, such as printing is required..

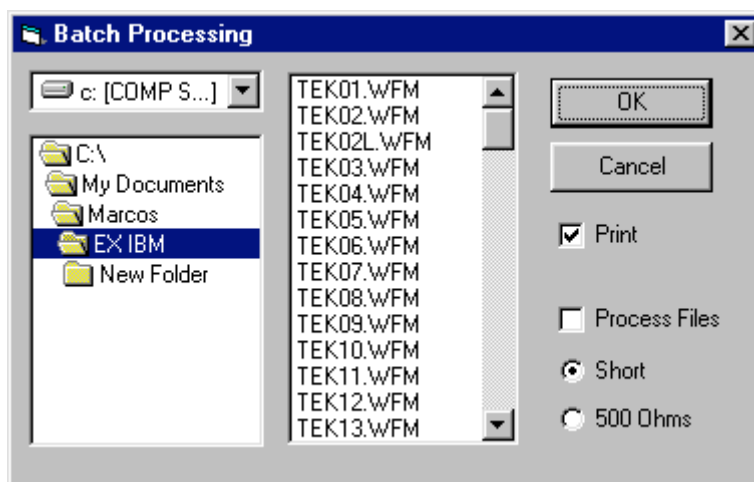


Figure 5. Batch Processing feature.

By default the software will print files that are selected on the batch-processing window. If line analysis is required, check on the Process File option.

To make multiple file selections:

1. Keep the Ctrl key pressed while clicking on multiple files or
2. Keep the Shift key pressed to select all files between two consecutive click of the mouse.

User Parameters. The software allows the use of user-defined parameters for both short and 500 Ohms test compliance. These settings are saved on the registry and saved every time the Ok button is pressed on the User settings screen.

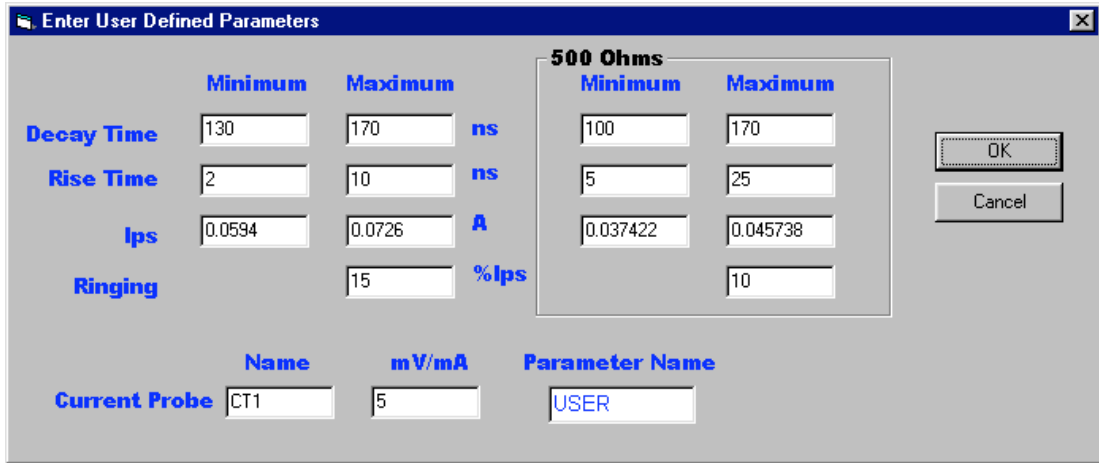


Figure 6. User parameters dialog.

. A comment can be added to the file using his command. The comment is added to the subtitle of the waveform display.

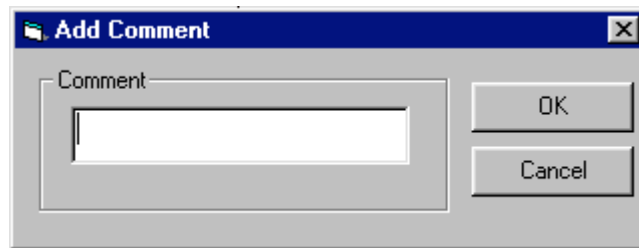


Figure 7. Add comment dialog.

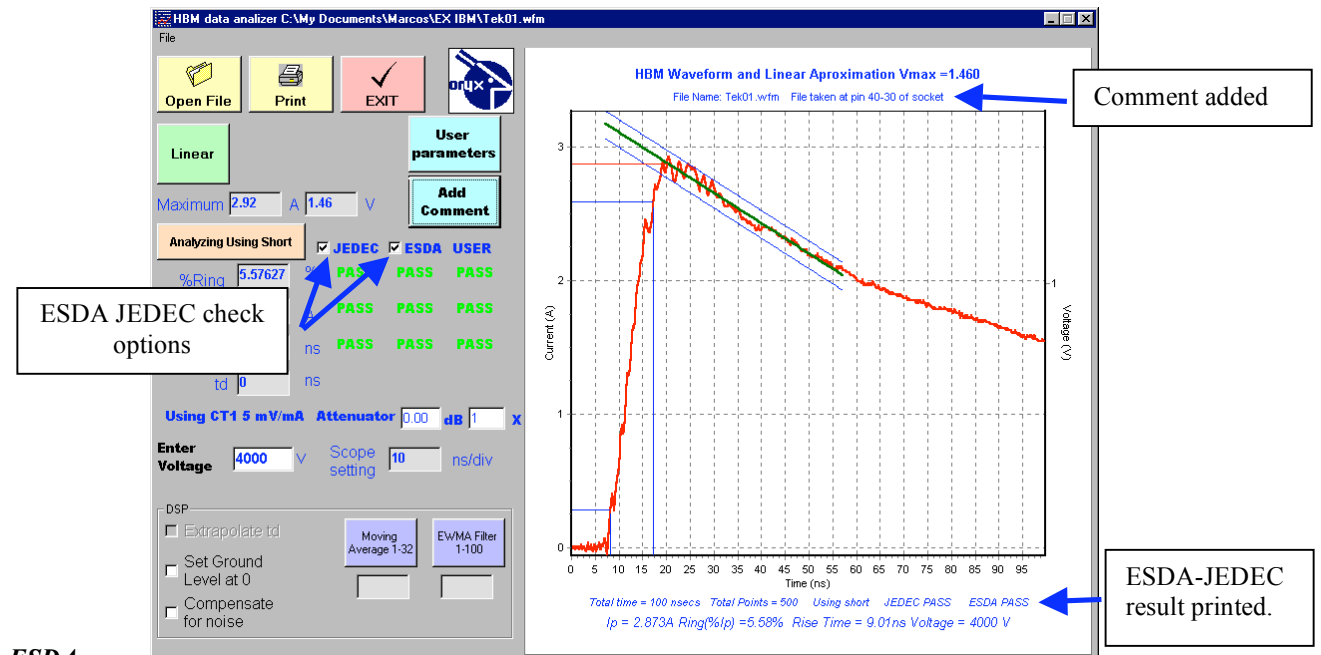


Figure 8. Printed comment and ESDA-JEDEC PASS/FAIL results.

The results of the analysis are printed on both the fields provided under the controls on the left part of the screen, and the Footer of the chart on the right. If an attenuator is used to acquire the waveform, change it at the controls section by typing either a multiplier or a dB value. By default the HBM Waveform Analyzer uses a CT1 probe and no attenuator for calculations.

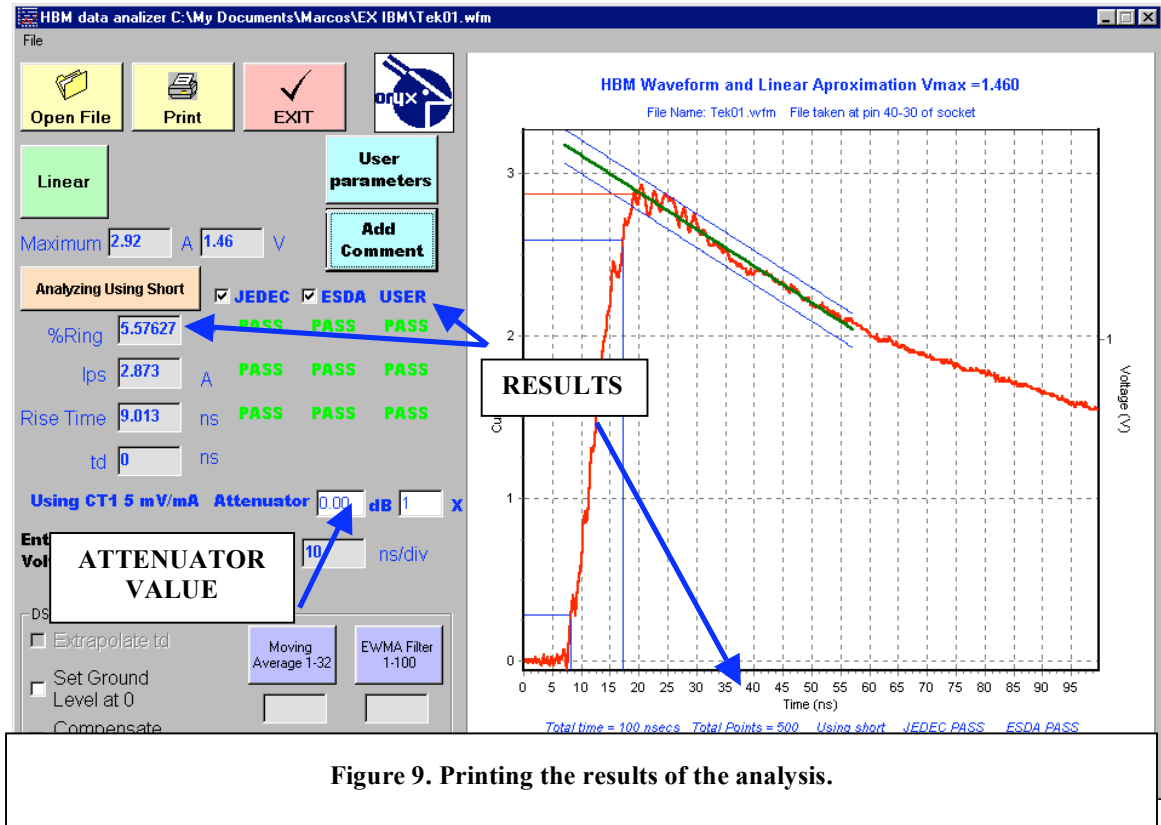


Figure 9. Printing the results of the analysis.