

Chapter 8: File Formats

To change any of the files at a structural level the basic format of each file type is listed below. Most of the simple ASCII editors should allow you to change the file(s). We give no guarantees that changing anything in these files will provide the kind of setup you desire. If you change the settings using these files, you do so at your own risk. The program creates everything in these files and the program is the appropriate place to change such settings.

When changing the file manually only add returns and spaces in the same place they are found in this and/or the actual document. Failure to do this will cause major problems. The symbols [] go around titles. Titles must be in the same place as they are located by default. Do not change the titles, or the order of the titles/sections.

File Format Options

The File Format Options Dialog is designed for the user to be able to modify the basic overall structure of the Waveform and Water Content Files. Possible modifications include: Day and Time formatting; Delimiter modification; and waveform file layout changes. Figure 1 shows the File Format Option Dialog Box. We will now describe the different features of the window:

You will note as you change any of the settings, the previews and descriptions of each file will be updated. Data in the previews is just an example of how real data would be formatted; it is not the actual data.

Delimiters To be able to modify delimiters, you must first check the “Allow Delimiter Modification” check box. This ensures that the user does not accidentally modify the files and make the unreadable by WinTDR.

Date: Will be placed between parts of the date.

Time: Placed between parts of time.

Section: Delimiter placed at the end of probe data, but before waveform data.

Basic: Separates each piece of data in the file.

Date and Time The Date and Time drop down boxes allow quick modification of how you want your data or time to appear. Each option has a small example and the actual description of how that example was and will be produced in the program.

Other Settings This section allows you to modify the layout of the output.

Put Waveform on new line: A carriage return is output after the section delimiter. Thus placing all waveform values separate from probe data.

Output Date then Time: Will output the date before outputting the time.

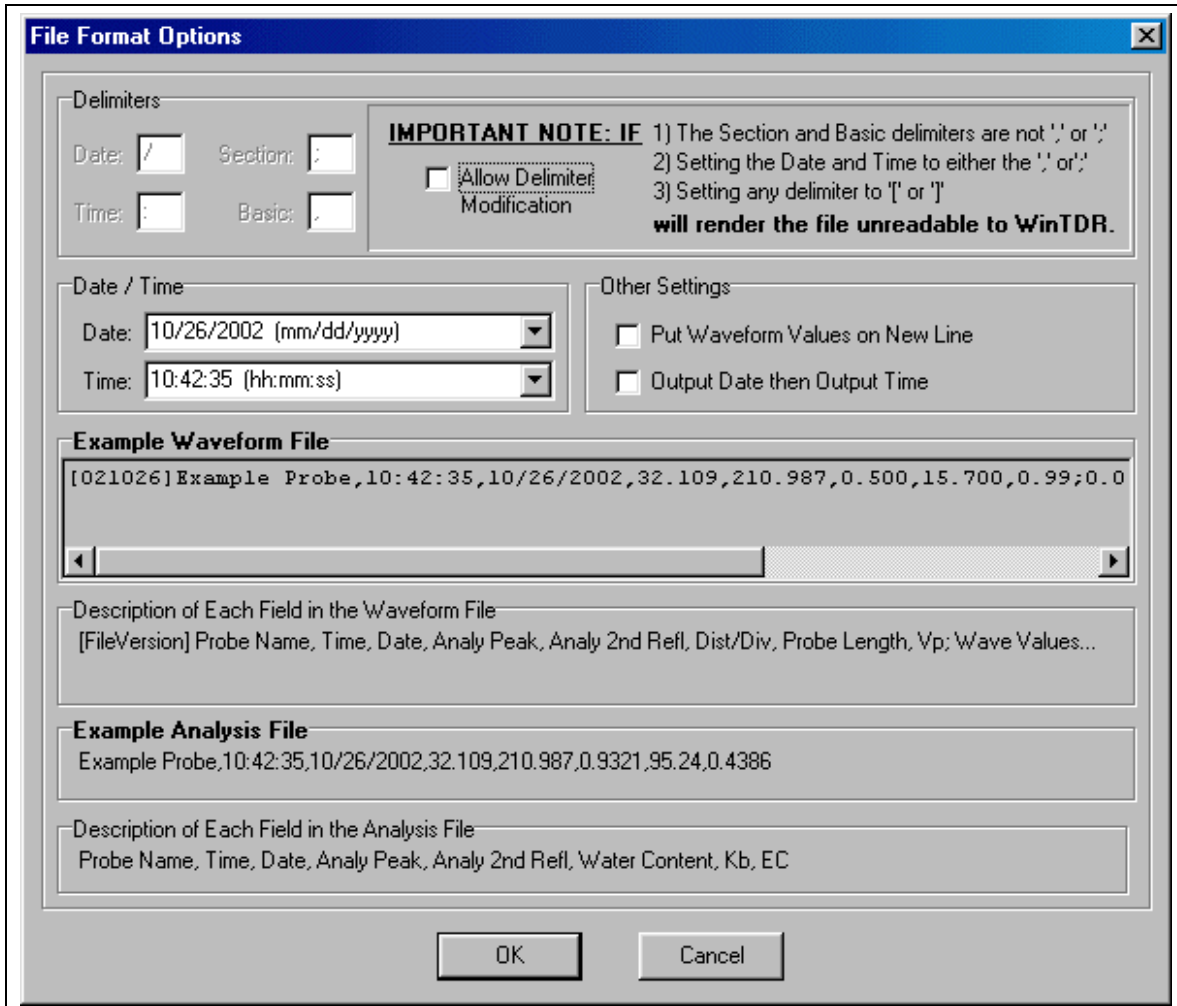


Figure 1: The File Format Options Dialog Box. Waveform (.WV) and Water Content (.WC) files can be modified using this window.

Probe Setup Files (.PSF)

Probe Setup Files contain all information regarding probe values of a setup. The structure of the Setup file is as follows:

[Version Section]	
Build	Indicates file version.
Type	Type of Setup (SINGLE, MUX, etc)

[Probe]	
IsMetric	Always 1 (Only Metric supported)
IsOffset	Has the probe been offset
Name	Name. May contain spaces
Length	Effective Length (cm)
Impedance	Impedance (Ohms)
DistPDiv	Distance Per Division (m)
CursorPos	Cursor Position (m)
PeakPos	Peak Position (m)
Scaling	Scaling; For Display Purposes
Znot	Used for Calculating reflection coefficients values.
Vnot	Used for Calculating reflection coefficients values.
AnalysisFN	Water Content File Name
WaveFN	Waveform File Name

Water Content File Format (.WC)

The default format of the Water Content File(s) is depicted below (see Figure 1). The Water Content File is dynamic and can be modified by the user using the File Formats Options in WinTDR. Note that commas with no spaces are used for the default separation between values.

Probe EX1,15:21:01,10:01:2002,68.000,166.000,0.7896,71.18,0.6693
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Figure 2: Sample line from a .WC file.

To change the water content file format, access the **File Format Options** window through the main menu, **Options | File Format Options** (See also Figure 3). Information on how use the File Format Option window was describe earlier.

The .WC files contain a series of fields. Each line is a reading and analysis. There are eleven fields that correspond to the following:

1. Probe Name (may contain spaces)
2. Time (or Date : See Other Settings in File Format Options).
3. Date (or Time : See Other Settings in File Format Options).
4. Analyzed Peak Position (point on the waveform 0 – end of waveform)
5. 2nd Reflection Position (or Point of Inflection, point on the waveform of 0 – end of waveform)
6. Bulk Dielectric (Kb)
7. Water Content (Wet)
8. Bulk Electrical Conductivity (Ec)

Waveform File Format (.WV)

The format of the Waveform File(s) is depicted below (see Figure 3). Only add returns and spaces in the same place they are found in this and/or the actual document. Failure to do this will cause major problems. Note again that commas (the basic

delimiter) with no spaces are used to separate values. Also note that the wave points are in units of Rho, and not in units of feet, inches or any other unit.

[020930]Probe Ex,15:40:01,10:01:2002,67.053,150.578,0.250,10.000,0.99;-0.00450,

Figure 3: Sample line from a .WV file.

To change the Waveform File Format, access the File Format Options window described earlier in this chapter. The .WV files contain also a series of fields described below (from left to right):

1. File Version date. (Build number from about box)
2. Probe Name (may contain spaces)
3. Date and Time (or Time and Date depending on File Format Options)
4. Analyzed Peak position. An index in the waveform array.
5. 2nd Reflection Point Inflection position. An index in the waveform array.
6. Distance per division (in meters)
7. Probe length (in cm)
8. Velocity of Propagation of the waveform.
9. Rho values. Each value is one item in the waveform array.

The ‘WinTDR.ini’ File

If you are experienced in editing .ini files, the groups and options for editing the WinTDR.ini file are listed below. The .ini file for WinTDR is stored in the same directory as the WinTDR.exe file. If you are unfamiliar with changing .ini files, don't change them. These are options that change between executions, or that are user adaptable.

[AOptions] Method=SLOPE Param1=-0.053 Param2=0.0292 Param3=-0.00055 Param4=4.3E-6 CalcEC=1 GetNewWave=1 SmoothTolerance=0 PeakTolerance=3 SlopeEpsilon=10 TangentAnchor=33	Analysis Options Either SLOPE or FLAT Coefficients for Topps equation Calculate EC (1 – Yes, 0 – No) Retrieve New wave for each analysis. Smoothing of waveform for analysis Index tolerance (+/-) when finding peak Index tolerance (+/-) when finding slope. % from 2 nd Refl. to Peak for tangent line.
[COptions] LengthOShow=1	Calibration Options Show Length Calibration Dialog Always

<p>[DOptions] Grid=filename Peak=255 Wave=8388608 Tangents=128 Analysis=0 Captwave=8421504 Wavewidth=1</p>	<p>Display Options Background Grid Graphic Peak Line color Waveform Line color Tangent Line color Analysis Lines (Peak / 2nd Ref) colors Captured Waveform Line color Waveform Line width</p>
<p>[FFormat] ODate=47 OTime=58 OSection=59 OBasic=44 TimeFormat=hh:nn:dd DateFormat=mm:dd:yyyy WaveNL=0 DTTime=0 DelimChange=0</p>	<p>File Format Options Date Delimiter Character Time Delimiter Character Section Delimiter Character Basic Delimiter Character Format for Time output Format for Date output Waveform on new line in WV files Date before Time on output Allow Delimiter modifications</p>
<p>[View] CaptWave=1 AOW=1 AOWLeftPos= 40 AOWTopPos= 90</p>	<p>View Options on Program Startup Captured waveforms are drawn Analysis Output Window is Visible The top left corner of the AOW Window will be positioned on the screen at this point (L, T)</p>
<p>[TekHardware] NoiseFilter=5 AutoPort=1 Is1502=1 DelayMultiplier=1 BaudRate=19200 VP=0.99</p>	<p>Tektronix TDR Hardware Options Noise Filter code from manual WinTDR will attempt to find the COM port Is TDR 1502 or 1503 Timeout multiplier COM baud rate Velocity of Propagation</p>