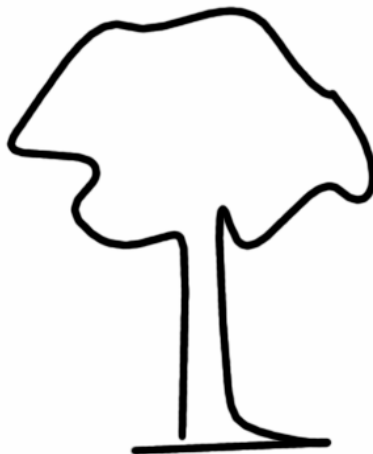


RESONANCE LOG GRADER

for log grading
POCKETPC software

User's guide



FAKOPP
Enterprise

FAKOPP Enterprise Bt.

www.fakopp.com

Hungary

2006

Resonance Log Garder (RLG)

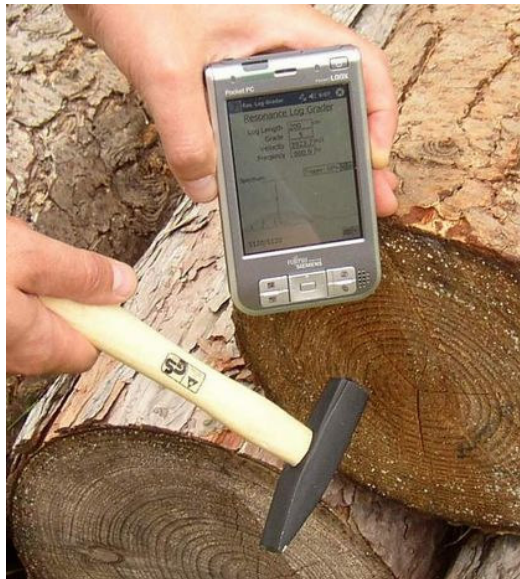
written by Gy. Divos, Fakopp Bt., Hungary

Log quality is influenced by the future lumber MOE. Because dynamic MOE is given by density multiplied by velocity square, the stress wave velocity in the log is an important quality indicator.

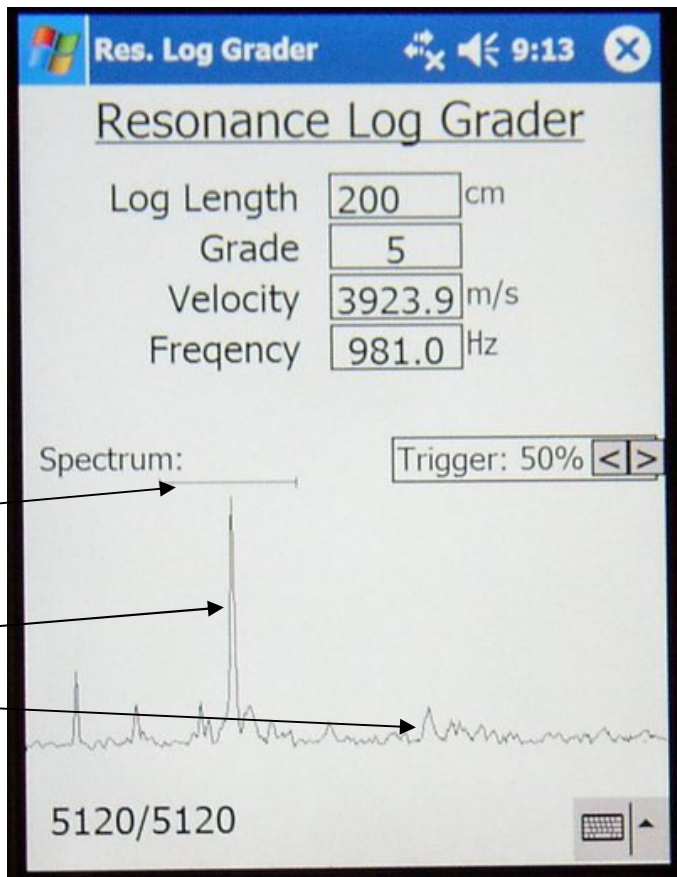
RLG is a simple tool; a hammer and a Pocket PC computer with a specialised software. The user sets the length, then hits the end of the log. The accurate velocity appears on the screen and gives a grade number. The product is available in two forms: software only or a PocketPC with the installed software.

Technical background

Velocity is measured by longitudinal vibration generated by operators hammer impact. The sound card of the pockert PC captures the sound. RLG software based on Fast Fourier Transformation (FFT) gives the frequency (f) of the firs vibration mode. Velocity is calculated by $V=2Lf$ where L is the length of the log. The length data is set by the operator.



Resonance Log Grader in use



Screenshot of the Resonance Log Grader software

The grade number (arbitrary grade) is calculated from the measured velocity.

The longitudinal vibration of the log, mode # 1 and 2 appears on the screen. Sometimes mode 2 peak is higher, than mode no. 1. The frequency is measured in the marked frequency window. A dominant peak has to be in the window region. We assume, that the velocity is in between 2600 and 5200 m/s. The upper limit is always two times the lower limit. If your log velocity is different, please set a new value in the ini file. The ini file is generated automatically by the first run of the software.

Set the trigger level by the arrows above the surrounding noise level. The setting is correct if the measurement start after hammer impact only. Please hold POCKETPC's microphone close to the end of the log.

A hint: the frequency for long log is low, hgenerating low frequency a rubber hammer is better than steel one.

Installation

- You must have "Microsoft Active Sync" software on your computer, it supports the data transfer between the computer and PocketPC.
- Connect your PocketPC to your computer.
- Run RLG-setup.exe (you can download it from fakopp.com). This is a demo version, the only limitation is the length of the log is unchangeable, preset value is 100 cm. If you want to test longer logs (up to 1200 cm) you need to register.
- The result of the installation is two executable files in
 \\Program Files\RLG directory
- RLG.exe is the main program, the Resonance Log Grader.
- Regtool.exe is the registration tool. It will generate your RegID.
- After purchasing the software and sending your RegID to office@fakopp.com we will provide you a RegKey
- Enter your RegKey into the appropriate field of the Regtool.
- Press OK. Now you will get a message about the succesful registration. From this point you will own a full featured Resonance Log Grader software.

Technical parameters:

Log length range: 1-12 m

Accuracy of the frequency measurement: +/- 2 Hz (depending on the actual PocketPC)

Requirements for pocket PC

- screen resolution 640*480
 - sound cards
 - Microsoft Windows Mobile Software 2003 or above
- (we have tested RLG on Fujitsu – Simens Pocket LOOX Pocket PC only)

Software is shareware, you can register at office@fakopp.com.

If you have question, please send mail to: office@fakopp.com, or call +36 99 510996.