bytran -|- spectral calculations for portable devices using the HITRAN database

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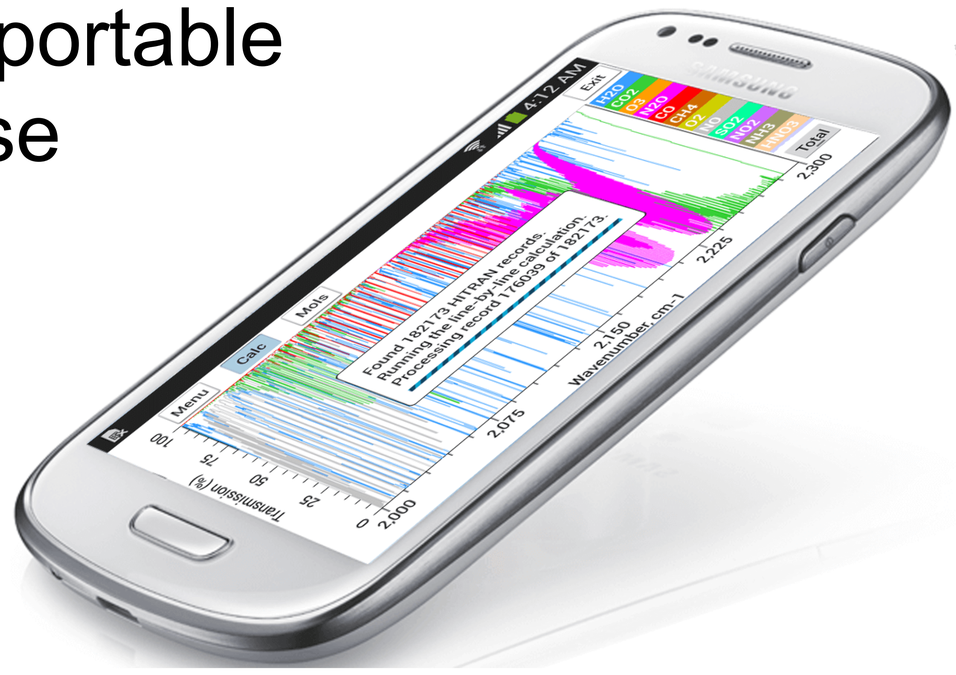
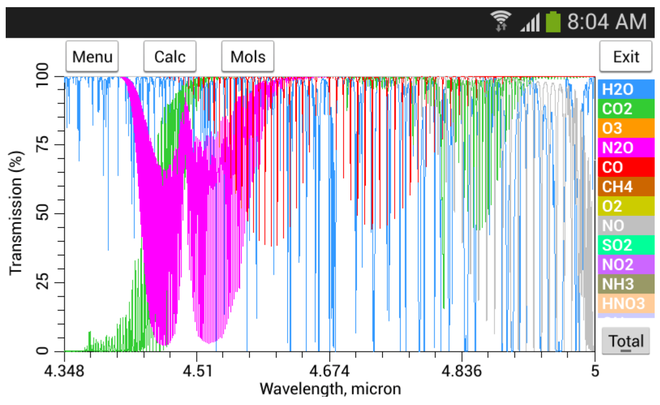


bytran is a mobile application for calculating atmospheric and molecular absorption spectra using the HITRAN data, MIT open source, Qt / C++ cross-platform source code

Separate molecules

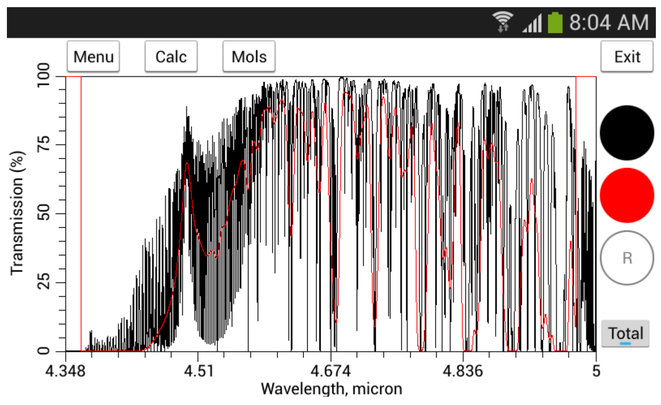


Mobile

Android, iOS, WinRT

For phones and tablets

Total spectrum

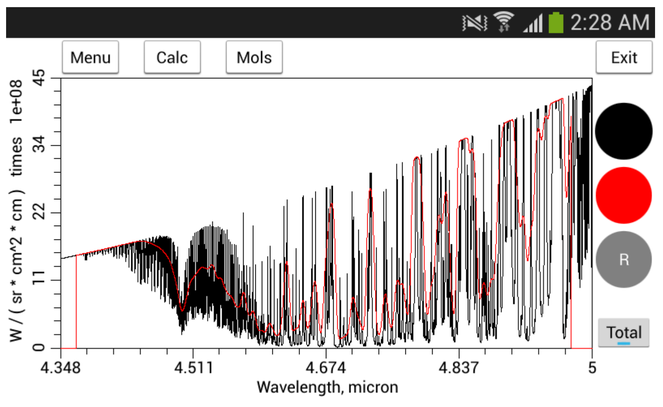


Desktop

Linux, Mac, Windows

Modified interface planned

Radiance (ported from HAPI)

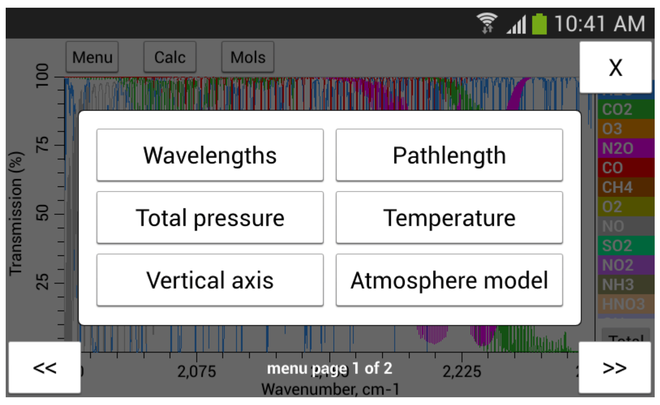


Embedded

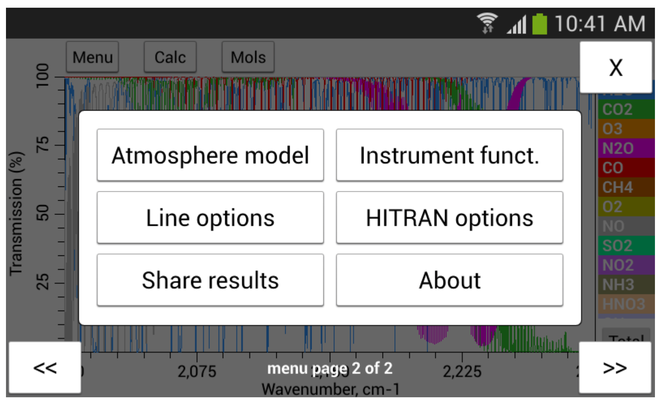
Raspberry Pi and other boards

Source code may be compiled to run on Linux-based embedded development boards

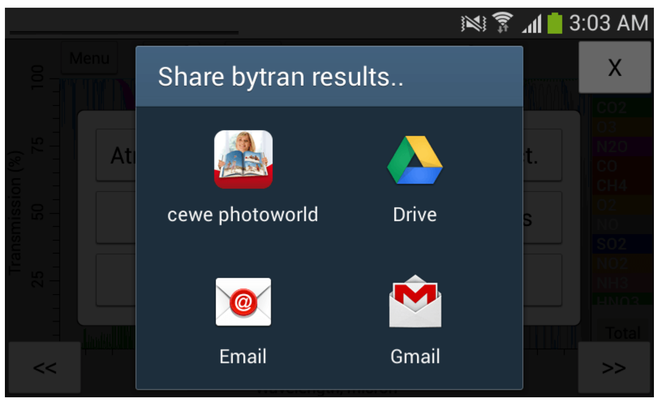
Wavelengths, Pathlength, Total pressure, Temperature, Atmosphere model, Lineshape options, Instrument functions (ported from HAPI), Molecules, Sharing results, HITRAN download options



Configuration parameters 1 of 2

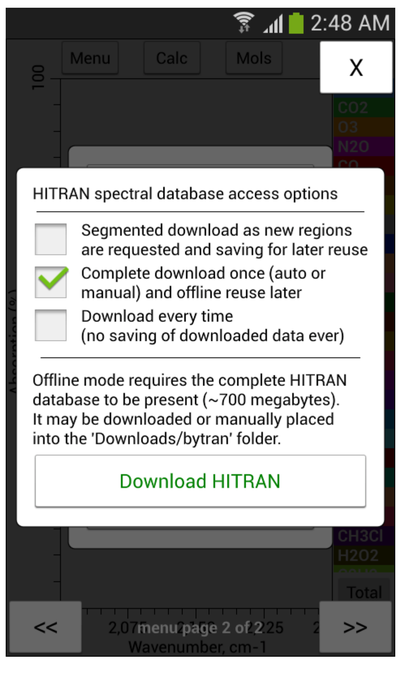


Configuration parameters 2 of 2

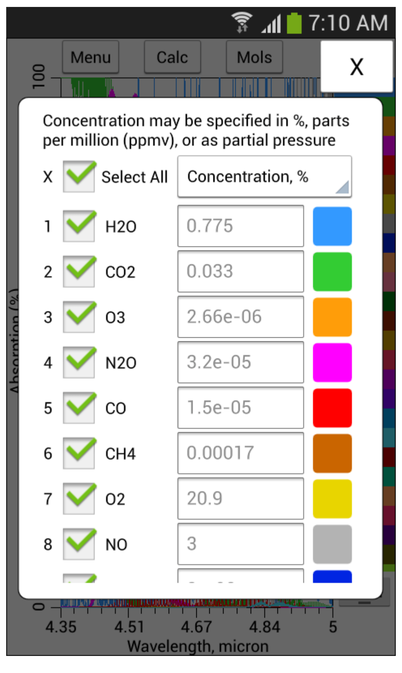


Sharing results as images & data

HIRAN downloads from hitran.org

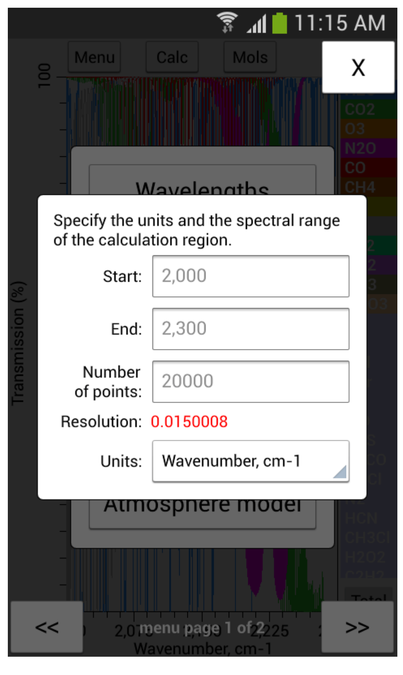


Concentrations, selected molecules

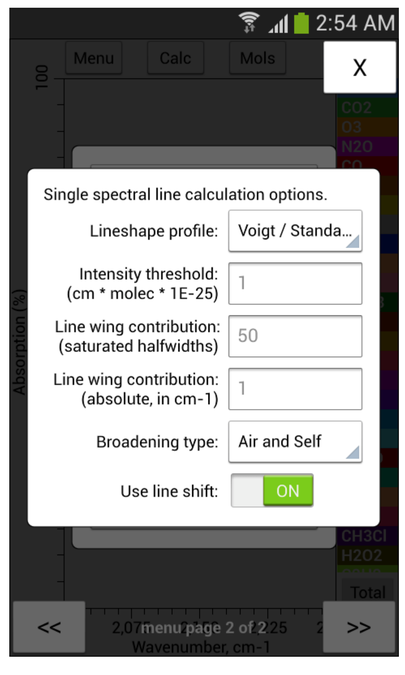


Spetrum color choice

Wavelengths range



Linshape parameters



The Voigt calculation routine used: Abrarov, S., and Quine, B. (2015). "A rational approximation for efficient computation of the Voigt function in quantitative spectroscopy". J. of Mathematics Research, 7(2), p 163. doi: http://dx.doi.org/10.5539/jmr.v7n2.