Analogue Reading Meter for dScope III

BETA Documentation

Overview

The Analogue Reading Meter for dScope is a software emulation of a moving coil type needle meter for displaying Readings from the Prism Sound dScope III. The dScope is capable of displaying an individual measurement result in a separate box which it terms a “Reading”. This Reading can have it’s own units, max and min, limits, bar graph etc. The Analogue Reading Meter for dScope is a little program to provide a moving coil meter for dScope Readings.

What it is and what it’s not

DMM for dScope is not part of dScope. It is a separate program, however, it relies on dScope being present and running. It acts as both a remote control for dScope and a display for dScope Readings. When you press a button on the Analogue Reading Meter interface, it can control dScope functions. When you make a change in dScope that affects a parameter of the Analogue Reading Meter, the Analogue Reading Meter display updates.

How it works

You don’t need to read this to be able to use the Analogue Reading Meter for dScope, but it will probably help you to understand why it behaves the way it does. The Analogue Reading Meter for dScope is a stand-alone program written in Visual Basic that uses the Active-X controls of the dScope software to get information from dScope and to control it. It updates it’s display periodically by asking the dScope for the value it is displaying and then converting that into a graphic of a meter needle, scale etc. When a button is pressed, a command is sent to the dScope.

Installation

Analogue Reading Meter for dScope consists of a single executable file “Analogue Reading Meter.exe”. This can be run from anywhere on your PC. The only requirement is that the Visual Basic Runtime environment be installed. This is often included on many new PCs or can be downloaded for free from the Microsoft web site.

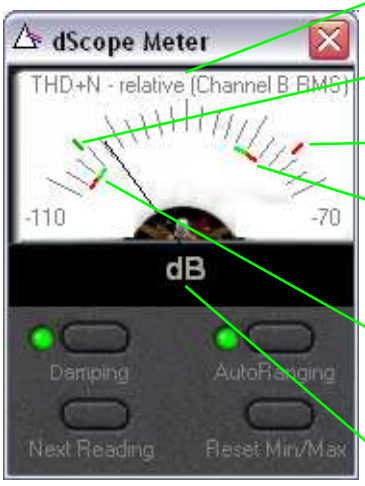
Un-installation

To un-install this program, simply remove the executable file “Analogue Reading Meter.exe” - the program makes no changes to your computer registry or settings.

Operation

To run the program, just run the executable “Analogue Reading Meter.exe” by double clicking on it. You can also make a shortcut to it on your desktop or task bar and run it in this way. The program itself is very simple. It has no menu or tool bar, and only has the graphic of the meter with its display and buttons. The functionality of these are described on the pages that follow.

METER AREA



Function Display - this shows the currently selected measurement function - this is taken from the title of the selected dScope Reading.

Min Marker - this (green) marker is taken from the dScope Reading minimum and shows the lowest point since the last reset.

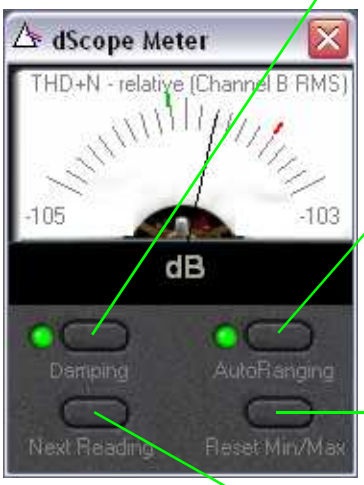
Max Marker - this (red) marker is taken from the dScope Reading maximum and shows the highest point since the last reset

Upper Limit Marker - the centre of this marker is the currently set maximum limit set in the dScope Reading. The maximum marker is green to the left and red to the right indicating that the needle should be to the left of this marker.

Lower Limit Marker - the centre of this marker is the currently set minimum limit set in the dScope Reading. The minimum marker is red to the left and green to the right indicating that the needle should be to the right of this marker.

Units Display - The units of this Reading are shown here.

CONTROL BUTTONS



Damping Button - by default, the meter damping is on. This attempts to make the meter needle move smoothly to give some idea of the average reading. This is one of the biggest advantages of a needle meter: the eye is very sensitive to angle and can quickly make an approximation of the average of a changing reading. The damping assists in this by applying a running average to the meter reading so that it smoothes it's motion. With damping on, the meter will not show peaks of transients correctly (although the max and min markers will still be correct). With damping off, the meter will appear more jerky, but will move to each value that it gets from the dScope.

Auto-Ranging Button - pressing this button enables and disables auto-ranging as indicated by the adjacent LED. By default this is off, in which case the dScope Reading's bar graph range is used. If turned on, it works the other way round and this controls the dScope bar graph range and scale. In order for this to function, it has to have the maximum and minimum values from the dScope Reading. If they are not turned on in the dScope interface, it turns them on. It then auto-ranges the scale to try and keep the minimum reading in the left hand side of the scale and the max in the right. It also auto-ranges the graduations on the scale so that it is divided up sensibly.

Reset Min / Max Button - pressing this button resets the minimum and maximum in the dScope Reading. This in turn will re-set the markers in the needle meter display. It has another side effect: because the auto-ranging is derived from the maximum and minimum, re-setting them also re-sets the auto-ranging (if turned on). This has the effect of zooming in on the scale to the highest resolution that will display the current needle position.

Next Reading Button - When the Analogue Reading Meter is started up for the first time, it just looks for the first dScope Reading it can find. If there isn't one, it will give an error message and close. If there is more than one Reading in the dScope, pressing this button will make the Analogue Reading Meter take it's data from the next available Reading. Which Reading it is tends to be obvious from the name displayed at the top and from the units. When the last Reading is reached, it starts again at the beginning. In this way it is possible to cycle through all the available meter Readings. If only one Reading exists, this button will do nothing. If that one Reading is closed, the Analogue Reading Meter will give an error message and close.

Prism Media Products Ltd
William James House
Cowley Road
Cambridge
CB4 0WX
UK

Tel +44 (0)1223 424988
Fax +44 (0)1223 425023
Email: sales@prismsound.com
www.prismsound.com