HA7701A
Quick Start Guide

HA7701A DELAY LINE PHASE NOISE ANALYZER

The HA7701A Phase Noise Analyzer can instantly assess the additive/residual phase noise of a device without the noise floor limitations that are evident with alternate designs. The broadband delay line architecture makes it ideal for making fast measurements of less stable signal sources such as free running VCOs, capturing instantaneous/random phase anomalies, as well as measuring both additive and absolute pulsed signal performance of a DUT.

PRODUCT SUMMARY

DUT Tuning Range	2GHz to 20GHz
Measurement Floor	< -165dBc/Hz
Measurement Speed	< 1s
Measurement Offset	1Hz to 40MHz
Measurement Types	Absolute, Additive, Jitter, Spurious, Pulse, *more!*
Communications Interface	Ethernet, USB
Warranty	3 years

HA7701A
Quick Start Guide

SOFTWARE APPLICATION OVERVIEW
This document provides information on the basic layout of the HA7701A application GUI as well as the necessary steps for connecting to the HA7701A Phase Noise Analyzer.

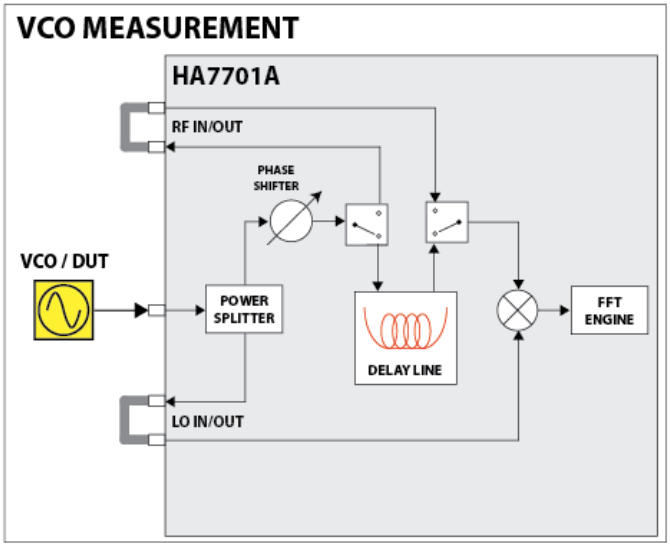
NOTE: The HA7701A application GUI does not require any installation. Simply run the executable file included on the USB thumb drive, to launch the software.

ESTABLISHING A CONNECTION
The HA7701A Phase Noise Analyzer can be connected directly to a PC via USB or Ethernet. Furthermore, the analyzer can be remotely controlled over a LAN connection via Ethernet. With direct connection via Ethernet the analyzer default IP address is 169.254.117.11.

GUI DASHBOARD
The reference numbers on the dashboard image correspond with the descriptions contained on the following page.

1. **File/Tools/System:** The '*File*' menu allows users to save/load data, export plots, and generate reports. The report generator captures the current plot and any measurement statistics. '*Tools'* provides quick access to the Tune Voltage outputs on the analyzer and displays input frequency and power for either LO1, LO2, or the DUT port. '*System*' allows the user to create instrument setting presets (saving time for commonly used measurement setups), view/save measurement debug files, and perform firmware updates.
2. **Acquire / +:** The '*Acquire'* button initiates a phase noise measurement. When the *'+'* button is depressed, selecting *'Acquire'* will overlay new measurements to the measured data already captured in the plot area.
3. **Devices: '***Devices'* allows the user to view any HA7701A analyzer directly connected to the PC (USB or Ethernet) or over a LAN connection (Ethernet only). Select the device by part number & serial number to establish a connection. The window located above *'Select Device'* will turn green (Ethernet) or blue (USB) once a successful connection is made.
4. **Measurement:** Users can change settings such as measurement type, offset, jitter analysis range, and # of correlations.
5. **Inputs:** Users must manually enter the DUT Frequency, and may select to use an external delay line.
6. **Outputs:** The '*Outputs'* button provides access to user controlled outputs which include the DUT Power Supply and Tune Voltage.
7. **Trace/Calcs:** Users can apply smoothing and spur removal functions to a data trace.
8. **Limits:** Apply test limit lines under pass/fail conditions to the plot area.
9. **Markers:** Allows the user to adjust the positioning of markers on a trace.
10. **Display:** Allows the user to modify the plot area. Users can edit the x/y axis max/min, plot title, x/y axis titles, trace names, plot export options, *etc.*
11. **Console:** The Console displays a log of instrument/measurement activity while also allowing the user to send ASCII commands directly to the instrument.
12. **Data Plot Area:** Displays acquired data: Absolute or Additive phase noise and spurious
13. **Status Indicator:** The Holzworth logo shockwave doubles as a status bar/indicator while measurements are in progress. Measurement time remaining is also shown above the shockwave.
14. **Measurement Statistics:** Displays statistics of the current measurement or currently selected trace.

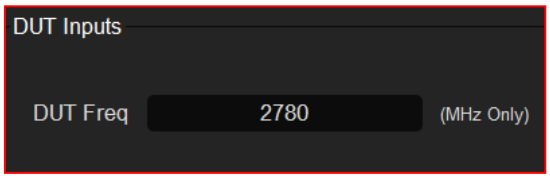
VCO MEASUREMENT HARDWARE CONFIGURATION



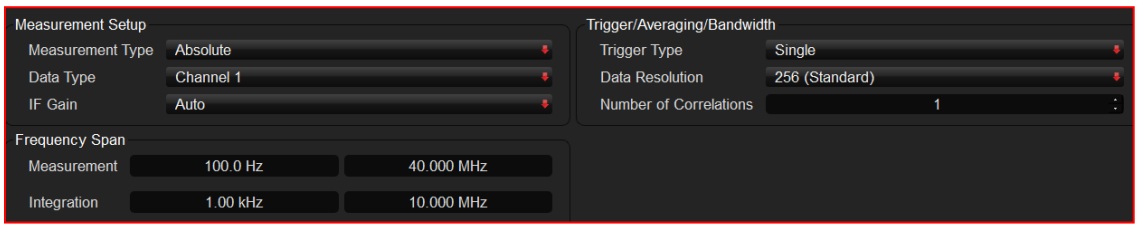
VCO/DUT Input Power: +17 to +18 dBm

Software Configuration for VCO Test

1. Connect to the instrument via Ethernet or USB using the 'Devices' menu by clicking the 'Devices' button, followed by 'Locate Devices' and selecting the instrument.
2. In the 'Inputs' menu enter the frequency of the DUT (default is set to 0).



3. Adjust for desired measurement offset, # of correlations, data resolution, etc. in the 'Measurement' sub-menu.



4. Click 'Acquire'.

SUPPORT

If there are any questions or issues please contact Holzworth Support directly.

TECHNICAL SUPPORT

Email: support@holzworth.com
Phone: +1.303.325.3473 (option 2)