Dynaudio Air series Calibration.

Getting started.
The Air series contains 2 different calibrations.

1: Acoustic calibration compensates for deviation in driver sensitivity.

2: Electrical calibration compensates for deviation in amplifier gain.

The Acoustic calibration can be changed easily by the user using the Air calibrate software available at http://www.dynaudioprofessional.com/en/ – instructions are enclosed.

The Electrical calibration can be adjusted using the tools and methods instructed by this manual.

To be able to do the Electrical calibration the following equipment is necessary:

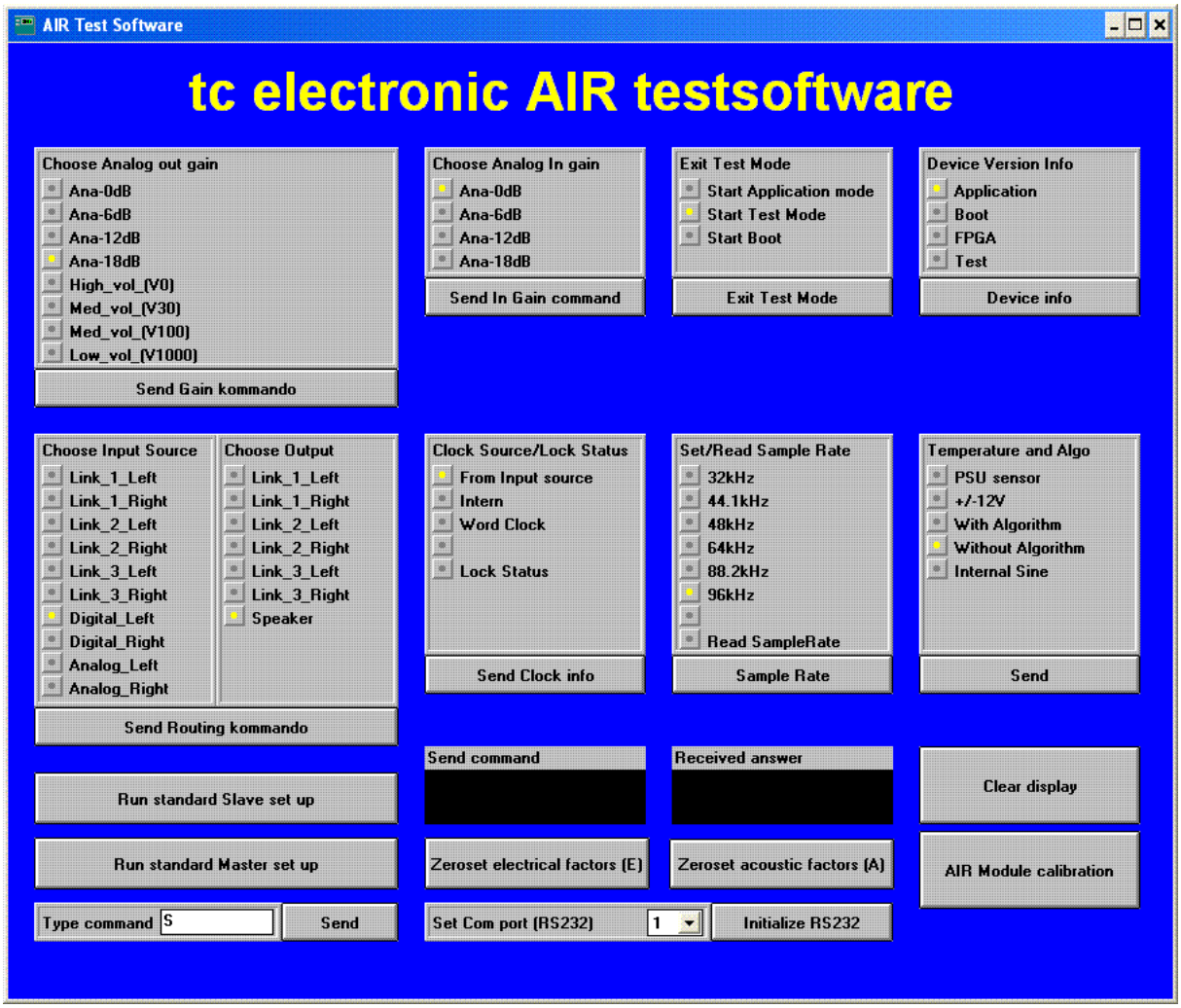
Software.
Air test software – TC developed Air test software. Available for download from Tech Server.

Hardware:
Display (795200111)
Ribbon cable for display (795750011)
PC to Air communication cable (as used with PC-IP (546028012))
Dummy load with 5th octave filter (795299999)
Audio Precision ATS-1 – or similar analogue measurement equipment.

The Dummy load with filter, the display and the cables are to be ordered separately, and can be ordered through sparepart@tcelectronic.com

Installing software.
Download the software from the tech server and Install by running the setup application.

The Air test software.
The Air test software is a program designed for testing and calibration the air modules.
When started up it looks like this:



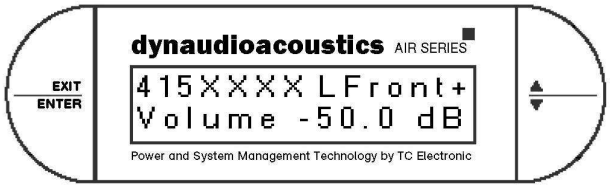
The Air test software makes it possible to do a lot of things. Starting from the top left corner.

Choose Analog out gain.
The Air module is constructed so that the output gain is internally switched in 4 different levels. The 4 levels are all 6dB apart. The gain adjustment in between these steps is done by the DA converter. Here it is also possible to choose different predefined output gain steps.

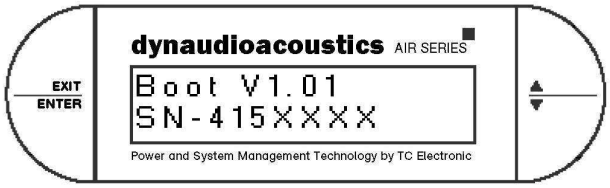
Choose Analog in gain.
If the module is equipped with a AD option card it is possible to switch between 4 different input gain steps. The steps are also all 6dB apart.

Exit Test Mode.
This option allows the user to choose which mode the unit shall be in. There are 3 different modes:

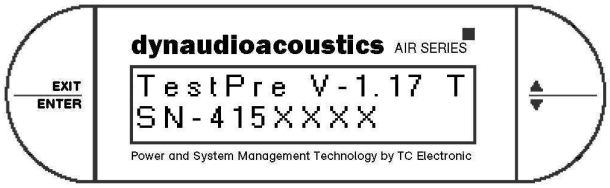
Application: The normal mode.
By holding “arrow up” and “arrow down” while powering on, the speaker will start up in application mode.



Boot: Used when manually updating the software.
By holding “Exit” and “arrow up” while powering on, the speaker will start up in Boot mode.



Test Mode: The mode the unit is to be used when using this software.
By holding “Enter” and “arrow down” while powering on, the speaker will start up in Test mode.



The Air module uses a 4th piece of software which is the “FPGACode.syx”

The current version of the software is as follows:
Application V.1.64 (Air 12 uses V.1.74)
Boot V1.51
Test V1.51
FPGACode V.5.00

The latest software can be downloaded from http://www.dynaudioprofessional.com/en/ and should always be updated to current version when in for service.

Device Version Info.
Indicated which version is installed in the module.

Choose Input source.
This allows the user to select between the different input sources.

Link 1 is the upper RJ45 connector.
Link 2 is the second RJ45 connector (lower on a slave). Also used for PC connection.)
Link 3 it the third RJ45 connector. Only available on a Master.
Digital is the AES/EBU Digital In XLR input. Only available on a Master.
Analog is the Analog option card. Only available on a Master.

Choose output.
This allows the user to select where the inserted signal should be sent out.

Link 1 is the upper RJ45 connector.
Link 2 is the second RJ45 connector (lower on a slave).
Link 3 it the third RJ45 connector. Only available on a Master.
Speaker is the analog output going from the main board to the amp modules.

Clock source / Lock status.
This allows the user to choose which signal source the unit shall lock to and the status.

Set/Read sample rate.
This allows the user to select which clock frequency the module shall run at.

Temperature and Algo.
This allows the user to:
Read the current temperature of the PSU
Check the +/-12V supply
Turn on algo which is the algorythmn. used when in application mode. X-over and tuning.
Turn off algo disables internal algo to testing purpose.
Internal sine turns on a internal signal generator running at 1KHz

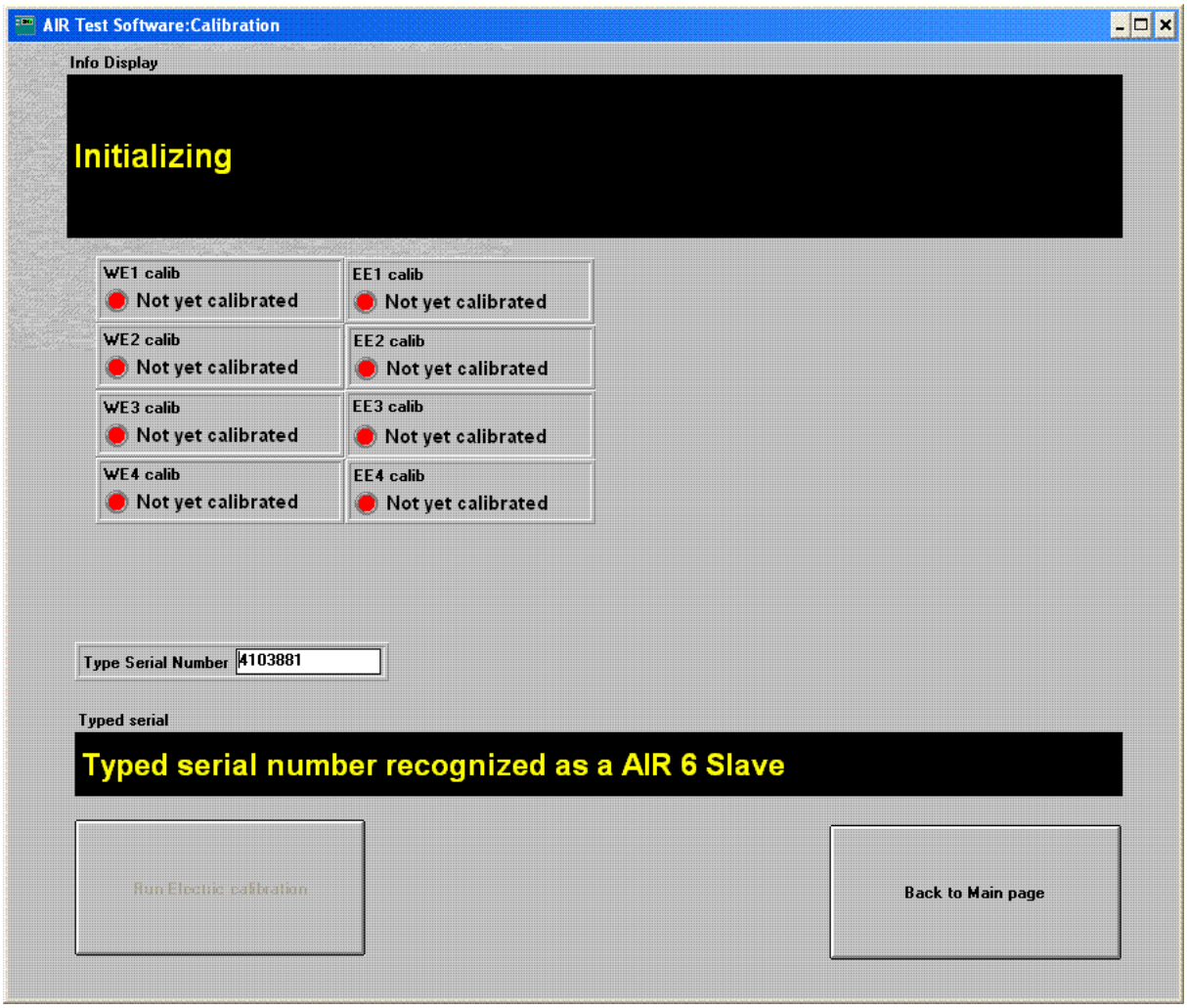
Run standard Slave set up and Run standard Master set up
Sends a series of commands for setting up the routing, clock and gain for doing repairs.

Type Command field.
Allows the user to send commands directly to the module.
All commonly used commands are available through the other buttons.

Zeroset Electrical factors. Zeroset Acoustical factors.
Clears all electrical and Acoustic calibration codes.
NOTE! – If this is done it is necessary to run the calibration process afterwards. Both electrical and acoustic. Otherwise the module will NOT sound correct.

Clear display.
Clears text in display.

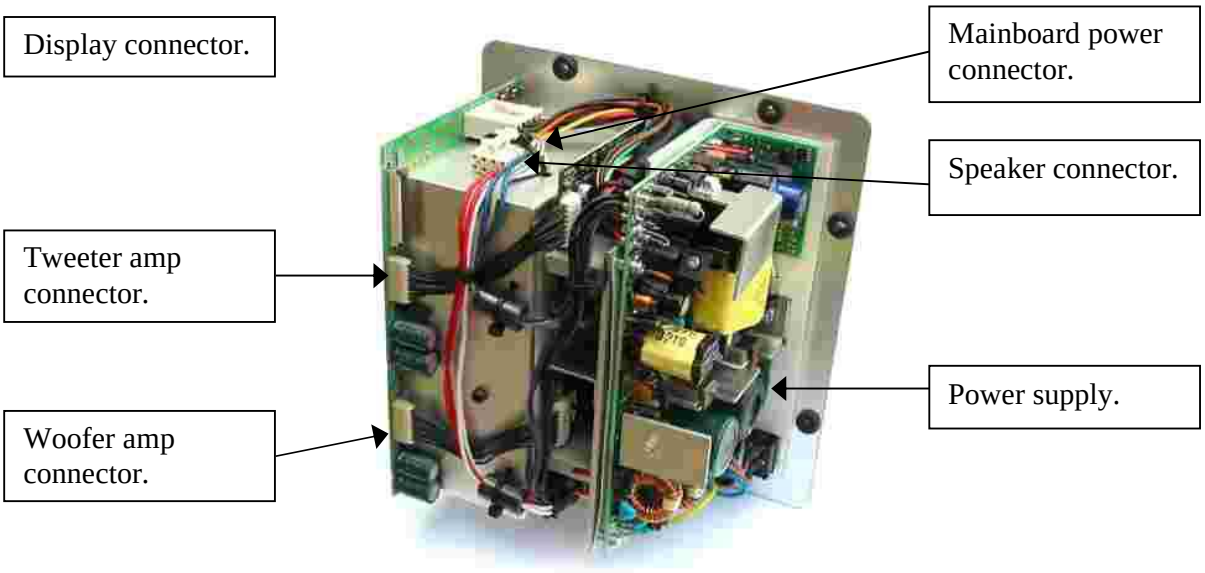
Air module calibration.
Launches a new window. This is used to electrical calibrate the modules.



Start by clicking the “Run Electrical calibration button”
Connect the module to the computer if not already connected.
Connect the dummy load and analog measurement device as shown below.
Make sure the module is in “test mode”
Type in the serial number of the module you wish to calibrate.

The program now clears all the electrical calibration codes. It is very important the calibration is completed otherwise the module will NOT sound correct. Now just follow the instructions given by the program.
NOTE! – All values used must with 2 decimals after the . (DOT - not comma) e.g. 14.73

This is a picture of the amplifier module used in Air 6 and Air 15. Amp modules used in the rest of the range looks similar.



This is a picture of the Amp and the dummy load