

SonicMaster Evaluation board – Quick start Guide

SonicMaster1 Evaluation Board Quick Start User Guide

PLEASE read this entire minimal document before starting. It may save you a lot of time.
 If you have questions contact support@anadigm.com before starting.

Introduction

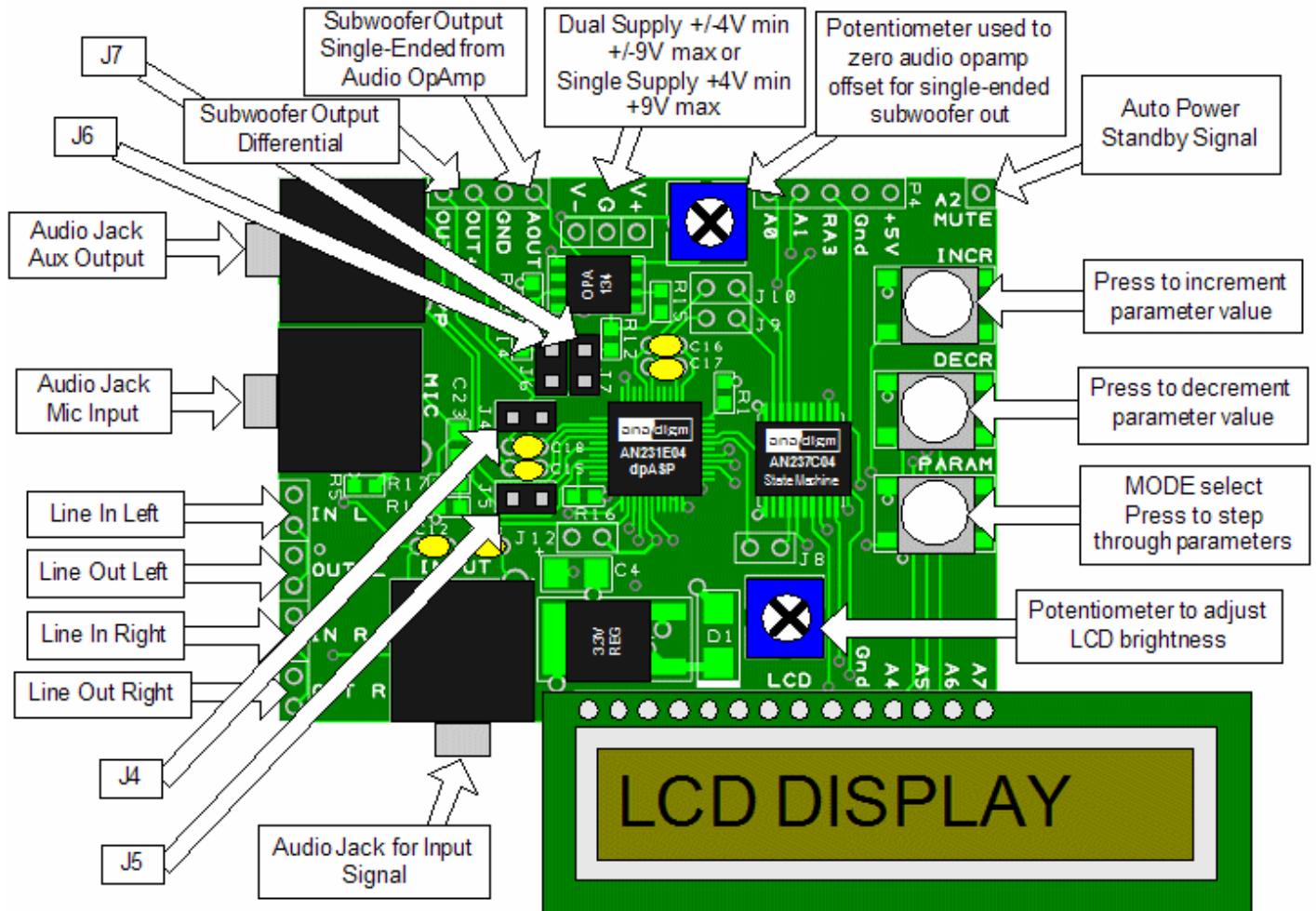


Figure1, Pictorial description of the board

This evaluation Kit contains:

- This Quick start guide
- SonicMaster1 PCB
- Microphone
- LCD Display
- 3.5mm stereo to dual phone wire

This Quick Start User Guide contains:

- Pictorial description of the board
- Simple and detailed quick start connection instructions
- Idealized complete system diagram connection diagram
- Overview of the State Machine menu and controls
- PCB circuit schematic drawing

For information Contact:



support@anadigm.com
<http://www.anadigm.com>

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Quick start instructions:

The initial state of the jumpers should be as follows:

Jumper	Default State	Function
J4,5	OFF	Shorts out capacitors on subwoofer output. This will make the outputs centered at +1.5V d.c. common mode offset (see J6,7 below)
J6,7	OFF	Connects the subwoofer output from dpASP to Audio OpAmp. If J6 and J7 are used (ON) then J4 & 5 must also be ON (shorted). The Audio OpAmp will level shift the signal to ground and convert it to single-ended. When setting the Audio OpAmp offset to zero using the potentiometer at the top of the board, a single jumper should be placed horizontally across the top of J6, 7 to short the Audio OpAmp inputs together.
J8	ON	Connects ERRb pin of the dpASP to the state machine. Always be on (shorted) - except when Anadigm Factory programs the state machine.
J9,10	ON	Connects the peak detect outputs from the dpASP to the state machine. Always on (shorted) except when factory programs the state machine.
J12	ON	Connects the negative signal input of the dpASP to +1.5V Always on (fitted), do not float the input.

- 1) Start by connecting the SonicMaster board to your Subwoofer. This can be done either using the
 - a) Subwoofer line level audio input, set the subwoofer volume to mid range and the corner frequency to maximum or bypass.
 - Or
 - b) Connecting into the subwoofer power stage and bypassing the existing Subwoofer signal processing, study the circuit diagram for your subwoofer and for SonicMaster carefully and choose an appropriate connection before doing this.
- 2) If you have SonicMaster1 with an LCD connect the LCD now.
- 3) Then connect a source of music (e.g. a CD player) to the Audio Jack input connector (3.5mm stereo socket).
- 4) Now connect a power source.
 - a) If you are using the single ended ground referenced Subwoofer outputs (AOUT and GND) the supply must be a dual power supply of +/-4V minimum and ground.
Tip: If using the single-ended output from the Audio OpAmp, the potentiometer at the top of the board can be used to zero the Audio OpAmp's offset. To do this, a single jumper should be placed horizontally across the top of J6, 7 to short the Audio OpAmp inputs together. Then use the pot to adjust the Audio OpAmp's offset until its output is at 0V. Then remove the jumper and place 2 jumpers vertically on J6, 7.
 - b) If you choose to connect from the differential output (OUT+ and OUT-) then a single 4v to 9 volt supply is needed. (In this case the Audio OpAmp is not used and not powered up.)
Tip, the differential output has a +1.5volt common mode d.c. offset. Depending upon ground loops in your complete system you may need to use half of the differential output (OUT+ and GND) to avoid 50/60Hz mains hum, OUT+ will have a 1.5v d.c. offset and requires an a.c. coupling node into the subwoofer. There is a capacitor on the PCB which can be used for this purpose, remove J4, 5 to realize a.c. coupling. This a.c. coupling may limit the signal bandwidth realized because of the capacitor and subsequent load.
- 5) Adjust the potentiometer above the LCD display until the display can be read clearly.
- 6) Play music through the system and check the subwoofer has audio output. Connect the input signal through the jack socket to the left of the LCD, or through the Line Inputs on the left of the board.
The subwoofer output may be adjusted manually using the board push buttons.
 - a) Press the PARAM button repeatedly (bottom of the 3 buttons above the LCD) to step through the different parameters. (see Table 1 on the next page for details)
 - b) Press the INCR button repeatedly (top button) to increment the value of the selected parameter.
 - c) Press the DECR button repeatedly (middle button) to decrement the value of the selected parameter.
- 7) After checking the subwoofer functionality as above, connect the rest of the system as shown in Figure 2 below. Then select the menu item Start AutoEQ and hit the "increment" button.
Tip: The receiver/Amplifier gain should be set to approx 0dB. Only use Anadigm Microphones – the board has none standard wiring

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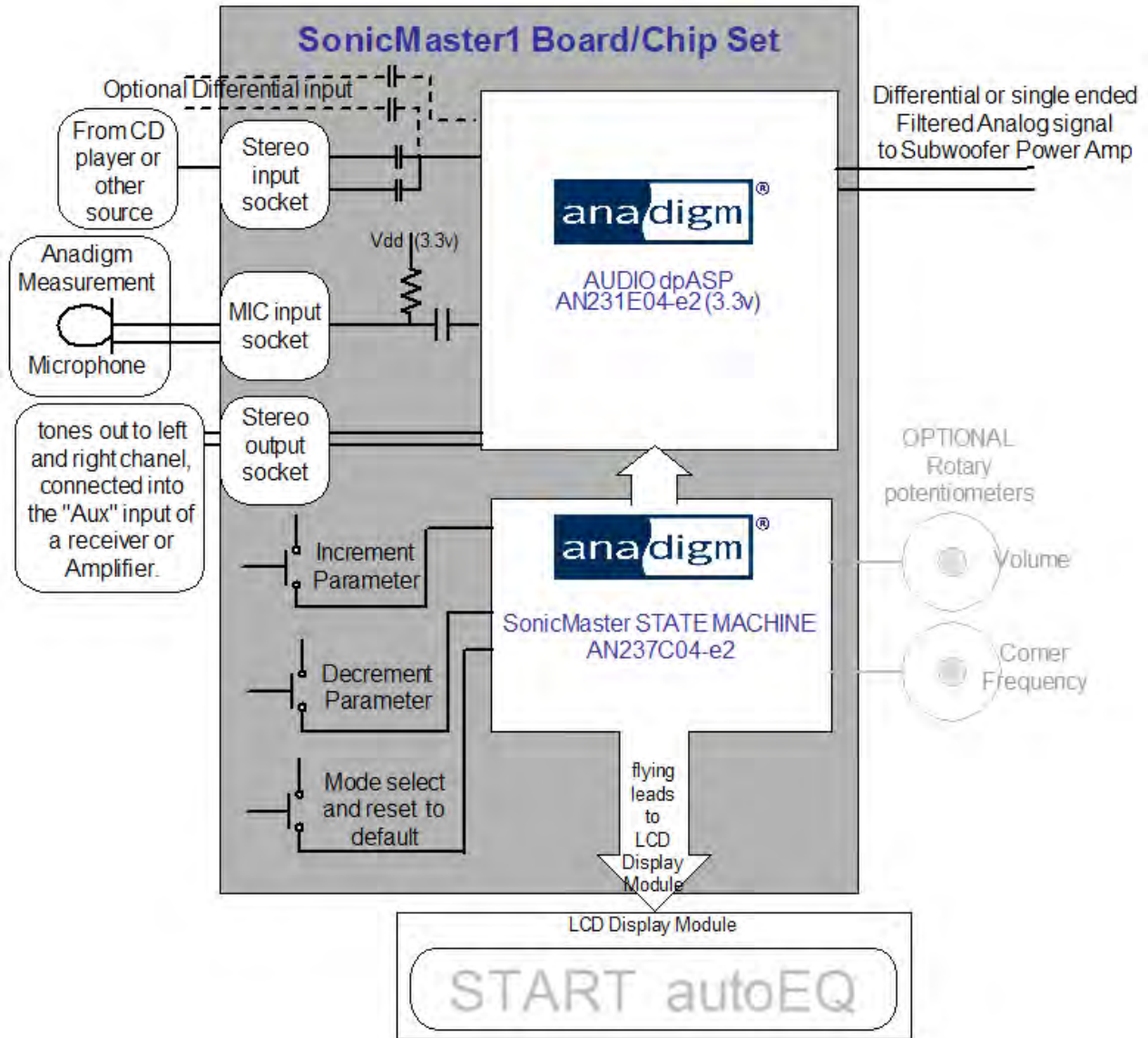


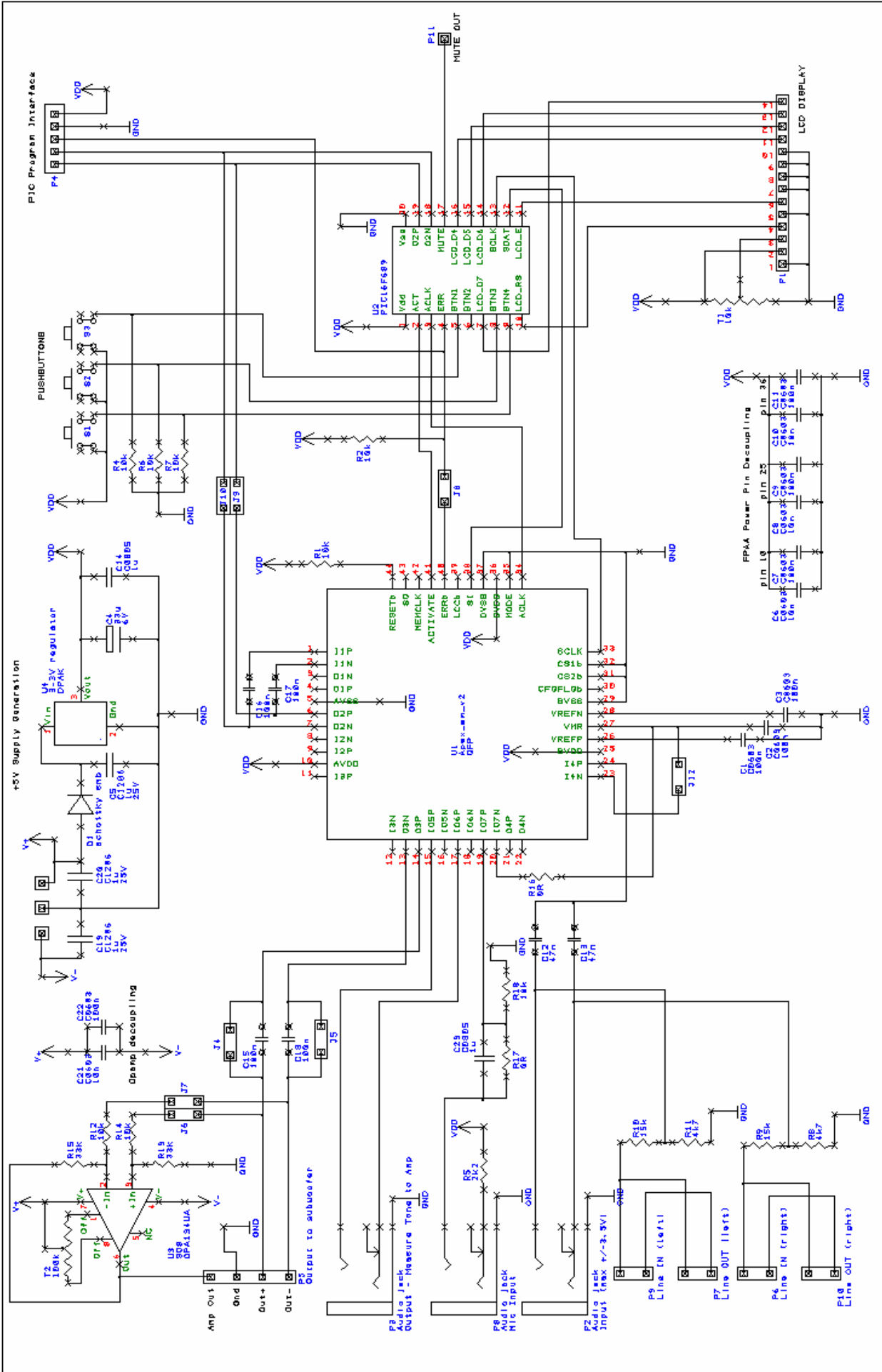
Figure 2.

Table1: SonicMaster1 State Machine software menu and parameter settings.

	Mode Select Button	Function	Increment/decrement
End user controls	power up	Displays Firmware revision for 2 seconds, then display Home**	
	Home **	Corner Frequency 40Hz to 200Hz 16steps	40, 44, 50, 56, 62, 71, 80, 91, 100, 111, 125, 143, 154, 167, 182, 200Hz
	Tap	Gain/attenuation -60dB to +6dB, log scale.23 steps	-60, -57, -54, -51,-48, -45, -42, -39 -36, -33, -30, -27, -24, -21, -18, -15 -12, -9, -6, -3, 0.0, +3 & +6dB,.
	Tap again	Phase	0 or 180 deg
	Tap again	Base boost	-12dB,-9dB, -6dB, -3dB, 0dB, +3db, +6dB, -9dB, & +12dB
	Tap again	Returns to Home **	
	Tap again	AutoEQ Start	Increment button push once
	Hold for 5 seconds	Resets to factory default	

Notes,** If no button is pressed for 5 second, currently displayed values are saved and the menu will return to home and display the volume setting. Settings are saved whenever a menu view is changed
 To return all values to factory defaults “hold the mode button” for 5 seconds.
 Absolute parameters values are firmware and can be changed, contact Anadigm to discuss this.

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E	D	C	B	A	Check	Projection	Anadigm	
Drn	Drn	Drn	Drn	Project	Do Not Scale	SonicMaster Board v2.0 (Apax)		
Chk	Chk	Chk	Chk	Title	Client	Drawing No.	Sheet	
						Dave Lovell	of	
						Oct 9th 2006		