



DIGITAL AUDIO REFERENCE THEATER SYSTEM

SYSTEM INSTALLATION GUIDE

Thank you for purchasing Phase Technology's revolutionary dARTS (Digital Audio Reference Theater System). This exciting entertainment system will provide the best possible sound reproduction of music and video programming in any room environment, and at every seat in that room.

Please take a few moments to study this Installation Guide to get the most out of the dARTS system. Your professional installer will make every effort to place the speakers to take into account your room's natural acoustics, but will also accommodate your needs in making them fit into your decorating plans. Phase Technology's perfectly matched speakers, and the Audyssey Laboratories MultEQ XT room correction software as implemented by your installer, will then work together to overcome the acoustic anomalies of your room and give you ideal sound at every seating location.

Referring to Audyssey's calibration guide, your installer will use a professional calibration microphone and a digital audio interface with his laptop computer to analyze your room's acoustic properties as they affect the entire seating area. This will give him the information to properly set up the volume levels and delays for each speaker, and then it will automatically generate a series of correction filters to load into your Phase Technology DP2000 amplifier/speaker controller. This correction process will then return your speakers to their original perfectly matched levels, and remove the room's harmful acoustic contributions, leaving you with superb sonic performance that sounds the same at every seat in the room.

SPEAKER PLACEMENT

Phase Technology's ability to precisely match each speaker to one another yields a much more enveloping and accurate soundfield. This immersive entertainment experience will be enhanced if you will follow a few basic rules of speaker placement. The front speakers (left, center, right) should all be placed in as close to a horizontal line as possible, and should be at or slightly above ear level while seated. The left and right speakers should be far enough apart (6- 8 feet if seated no more than 12 feet from your video display) to separate the information from each channel, but not so far as to create a discontinuity with the image on the video display. With a large projection screen, they should be placed as close to the sides of the screen as is practical. In addition to being in line with the front channels, the center speaker should be as close to the center of the display as possible, whether above/below the display, or behind a perforated projection screen. Phase Technology speakers are magnetically shielded so they will not interfere with any type of television set. Please place the included rubber feet on the bottom corners of each speaker to keep it from vibrating against the shelf or stand on which it sits.

Each of the dARTS speakers (except for subwoofers) includes Phase Technology's acclaimed variable-axis soft dome tweeters. This allows your installer to direct high frequencies toward your listening location for even greater latitude in speaker placement, and more precise imaging and localization of sound. Please adjust these tweeters by carefully pressing on the outer rim of the housing only, avoiding contact with the actual soft dome speaker element. These adjustments, if needed, should be done prior to your installer calibrating the system to your room, so the correction process will read the tweeters' energy accurately at each listening position.

The surround speakers should be placed well above ear level in most rooms. Whether you are using direct-radiating speakers or our switchable dipolar/bipolar speakers for the surround channels, please pay attention to placing them to create a large and enveloping soundfield. In a 5.1-channel configuration, you will use one pair of surround speakers. If your listening area is near the back wall, the best results can often be obtained by placing the surround speakers on the side walls, centered on your listening positions. With speakers directly to the sides, switching the surround speakers into "Dipole" mode (with their front-panel toggle switch) will a very diffuse, non-directional soundfield. If you prefer to have more localization of the surround effects, select the "Bipole" mode or use direct-radiating speakers to match the front channels. If your seating is away from the back wall, you can choose to mount your surround channels either beside or behind the listening position. Experiment with both "Dipole" and "Bipole" surround settings with your installer to see which sounds best to you, so he can calibrate the room to your taste.

In a 6.1-channel setup, a pair of surround speakers will be placed to the sides of your listening area, with an additional rear center channel speaker behind you. If you choose to implement 7.1-channel surround you will use a pair of surrounds to the sides, and another pair behind you, spaced evenly to fill the room. Again, please experiment with your installer to determine which modes sound best for each pair before he calibrates your room to determine the correction curves for each channel. If you change your mind later, you will need to have the room recalibrated to accommodate the new speaker settings. Also, if you change your room's furnishings in any significant way (floor coverings, drapes, furniture) please have your installer recalibrate the room to return your system to its original target response curves.

Your dARTS powered subwoofer(s) are specifically designed to blend well with the dARTS main speakers, and to perform well with either music or movies, augmenting the deep bass which is such an integral part of our emotional involvement with our entertainment choices. Although very deep bass is essentially non-directional, the higher bass frequencies and the initial attacks of each note are often shared by the main speakers. Thus, subwoofers usually blend best when they are relatively close to the front channels. The dARTS Custom Built-In line offers subs which are the same width as the main speakers, so they can be readily used as speaker stands, ensuring proper integration and impact. If you do use the system in this way, please have your installer mount the included connecting brackets to lock the subs and main speakers together, with their fronts vertically aligned. The brackets allow for vertical adjustment of the main speakers to accommodate the use of isolation feet. The Audyssey Laboratories MultEQ XT room calibration software WILL account for sub placement (as it does for all speakers) while measuring your room and designing the correction curves, but the closer you can come to ideal placement, the better will be the results.

SYSTEM WIRING AND CONNECTION

Phase Technology's dARTS systems are unique in that all speakers are either bi-amplified or tri-amplified. This means that each tweeter, midrange, and woofer set is connected to their own individual amplifier channel to allow for greater dynamic performance and flexibility in configuration. To take advantage of these connections, front main and surround channels need to be wired with four-conductor speaker wire. The horizontal center channel is tri-amplified, so it needs to have six conductors available. Phase Technology recommends using 14 AWG speaker wire (no smaller than 16 gauge) for each of these connections. Wire with higher gauge numbers is thinner, and is not recommended.

The dARTS subwoofer includes its own 500-watt on-board power amplifier. It will need to have a shielded audio interconnect run to its "LINE INPUT L" jack from the DP2000 amplifier/controller's "SUB OUT 8" jack. The subwoofer's amplifier features both line-level inputs and outputs. To add additional subwoofers to increase the bass performance in a large room, have your installer run an additional shielded audio interconnect from the first sub's "LINE OUTPUT L" jack to the second sub's input "LINE INPUT L" jack, continuing on to as many subs as desired. The sub amp's volume control should be set at the "12:00" position for the calibration process, but can then be raised or lowered a bit to match your own desired bass levels in the room.

The heart of the dARTS system is the DP2000 digital amplifier/controller. It consists of a 16-channel power amplifier (up to 250 w/ch), the setup firmware used by Phase Technology to individually match your speakers to each other (frequency response, crossover, time alignment), and space for the room correction program your installer will run to calibrate the system to your room. Each of your speakers will connect to the DP2000 with either two or three pairs of speaker wire. Your surround processor or receiver's preamp outputs will also be connected to the DP2000. If desired, your installer can connect a 12 VDC trigger to the amplifier's "POWER CONTROL IN" jack from your surround processor or your automated control system to turn the amplifier on and off. There is also a "POWER CONTROL OUT" jack available to pass on the control voltage to another component in your theater system. The following tables show how each channel's wiring is connected to the amplifier/controller's input and output terminals:

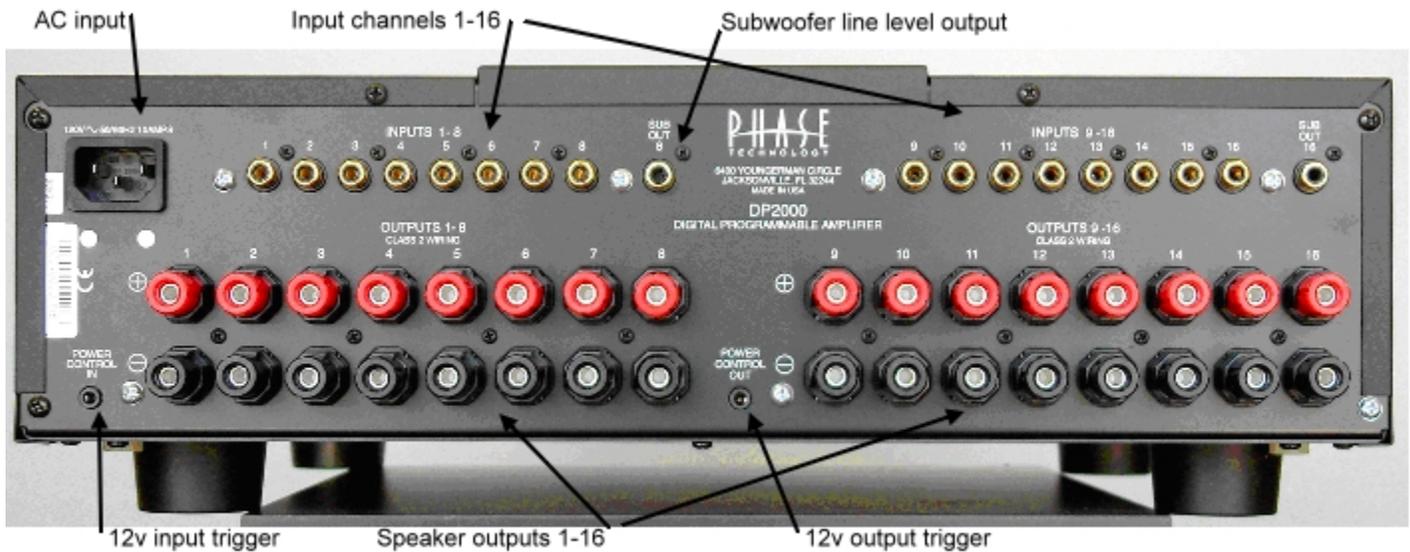
CONNECTIONS FROM DP2000 TO SURROUND PREAMP/RECEIVER

DP2000 INPUT NUMBER	PREAMP OUTPUT CHANNELS
1	LEFT FRONT
2	RIGHT FRONT
5	CENTER
6	SUBWOOFER
9	LEFT SURROUND
10	RIGHT SURROUND
13	LEFT REAR IN 7.1, OR REAR CENTER IN 6.1
14	RIGHT REAR IN 7.1

CONNECTIONS FROM DP2000 TO SYSTEM'S SPEAKERS

DP2000 OUTPUT NUMBERS	SPEAKER CONNECTIONS	DP2000 OUTPUT NUMBERS	SPEAKER CONNECTIONS
1	LEFT FRONT WOOFER	9	LEFT SURROUND WOOFER
2	LEFT FRONT TWEETER	10	LEFT SURROUND TWEETER
3	RIGHT FRONT WOOFER	11	RIGHT SURROUND WOOFER
4	RIGHT FRONT TWEETER	12	RIGHT SURROUND TWEETER
5	CENTER WOOFER (NOT CONNECTED IF USING A 2-WAY CENTER SPEAKER)	13	LEFT REAR WOOFER IN 7.1 (OR REAR CENTER WOOFER IN 6.1)
6	CENTER WOOFER/MIDRANGE	14	LEFT REAR TWEETER IN 7.1 (OR REAR CENTER TWEETER IN 6.1)
7	CENTER TWEETER	15	RIGHT REAR WOOFER IN 7.1
8 (RCA "SUB OUT 8" JACK)	TO SUBWOOFER(S)	16	RIGHT REAR TWEETER IN 7.1

PLEASE NOTE: Although these connecting connections directions are not "normal," based on conventional surround systems, they ARE correct for the dARTS system, and must be followed exactly for the system to operate properly and safely. Please do not plug the amplifier into AC power or turn it on until ALL system connections have been securely made.



DP2000 DIGITAL PROGRAMABLE AMPLIFIER

SPECIFICATIONS

Model Number	DCB1.0-LR	DCB5.0-C	DCB-SURR	DCB210-S	DP2000
Description	Left, right main	Horizontal center	Dipolar/bipolar surround	Subwoofer	Digital amp/controller
System Type					
Woofer	(2) 6.5" Glass/honeycomb	(1) 6.5" Glass/honeycomb (1) 6.5"	(2) 6.5" Glass/honeycomb	(2) 10" long-throw woofers, 500 watt BASH amplifier	16 channels
Midrange	N/A	Glass/honeycomb	N/A		125 w/ch @ 8 ohms
Tweeter	(1) 1" soft dome tweeter	(1) 1" soft dome tweeter	(2) 1" soft dome tweeter		250 w/ch @ 4 ohms
Impedance	4 Ohms	4 Ohms	4 Ohms	4 Ohms	
Frequency Response (+/- 2dB)	40 Hz-30 kHz	40 Hz - 30kHz	60Hz-30kHz	20Hz-120Hz	N/A
Dimensions (inches W xH xD)	14 x14 x 8.57	18.75 x 8.25 x 11.5	10.5 x 20.25 x 4.63	14 x 28 x 17	17 x 5.625 x 17