



20/20[™] S250[™]
System Subwoofer

USER GUIDE



Thank you for choosing the 20/20 S250 System Subwoofer. To get the most from your new subwoofer, please take a moment to read this manual and familiarize yourself with the product's features, set-up, and use.

About the 20/20 S250 System Subwoofer

Everyone wants more bottom end from their audio setup, and the Event self-powered 20/20 S250 System Subwoofer makes an excellent foundation for an extended bandwidth monitoring system. With five balanced inputs and pass-throughs for active monitors, the 20/20 S250 provides low frequency bandwidth and power extension to all audio channels in mono, stereo, and 5.1 surround monitoring systems. A sixth balanced input is available for monitoring the separate Low Frequency Effects (LFE) “.1” signal, along with its own pass-through for feeding multiple subs when room size or program material demands more acoustic output.

The 20/20 S250's variable crossover allows you to tune the subwoofer to your active monitors' natural low-end response. This produces the lowest possible sub-to-monitor crossover frequency, which results in more accurate monitor system performance, and more options for subwoofer placement in the studio. Other subwoofer systems only pass the front channels through a fixed 80Hz crossover, which changes the low frequency sonic character of the monitors and unnaturally redirects more audible acoustic energy through a single low frequency channel.

The 20/20 S250's versatile Bass Management System includes the five monitor inputs and a monitor group level control. This feeds the active variable crossover, a continuously variable 0-180° phase delay control, and a polarity invert switch. There's also a monitor input disable switch for instant in/out selection. The separate LFE input has its own level control and a separate crossover fixed at 120Hz. Everything works together as a system: The 20/20 S250 System Subwoofer.

Crossover, phase, and polarity settings for Event Direct Field Monitors are included in this user guide. Additional information can be found at www.eventelectronics.com.

Unpacking

The shipping container is designed to protect your subwoofer during transit. Please unpack and check your subwoofer carefully, and immediately report any damage to your dealer or to the company that delivered the subwoofer to you. The packing materials are designed to be reused—do not discard them. If you need to return the subwoofer to the factory for repair, it must be shipped in the original packaging.

Setup

The monitoring format and room size generally dictate subwoofer set-up. The 20/20 S250 System Subwoofer supports Mono, Stereo, and 5.1 channel formats, plus most anything in-between.

If you are confused about integrating a subwoofer into your stereo monitoring system, or about how to set up your surround speakers with a subwoofer, don't worry: If you currently have an accurate set of active direct field monitors up and running—that is, properly placed in front of you in a reasonable acoustic environment—then you are likely ready to place, connect, and use the 20/20 S250. And, if your control room is large enough, with some space behind the listening position, you can add three more of the same monitors mounted at the same height as your existing monitors, and be ready for 5.1 surround monitoring.

The truth is that the same acoustic principals apply whether you have two speakers or six. You cannot go wrong if you follow these few guidelines:

- Start with good monitors. If you have two trusted direct field monitors, get three more of the identical kind for your surround monitoring system. Good stereo monitors make good surround monitors.
- It seems obvious to place both speakers in a stereo pair equal distance away from the listening position. We do this instinctively to maintain stereo balance. The same rule applies to surround monitoring where *all* the speakers (fronts, rears, and subwoofer) are placed at equal distance to the

listening position. After placing all the speakers on the diameter of a circle in this manner, with the listening position in the center, distance-related amplitude and time offsets will be minimal.

- The final element, positioning on the circle, is determined by your format. In the case of a **mono** system, both the single monitor and subwoofer are placed directly in front of the listening position, the monitor at ear level, usually directly above the sub.
- In a **stereo** system, the two nearfield monitors typically sit 60° apart, or 30° on either side of straight-ahead, again positioned close to ear level. If you are using one subwoofer, place it on the circle between the two speakers. If you have two subs, one for each channel, place them directly under each monitor, again keeping everything on the circle.
- Finally, **surround** formats with front, center and rear speakers fill in additional angles on the circle. The center channel is obviously located front and center, with the two remaining front speakers at least 30° on either side of center, or 60° from each other. The two rear surround monitors are often spaced wider apart than the front speakers—sometimes as much as 120°.

Connections and Operation

The 20/20 S250 is ideally suited for monitoring the LFE channel, extending the overall low frequency response of an active monitoring system, or doing both simultaneously.

- **LFE monitoring only.** Feed the LFE signal via the LFE input connector and set the subwoofer level with the LFE Input Sensitivity control. If you are using speakers other than Event Direct Field Monitors, start with the Polarity Invert switch in the out (off) position, and set the Phase Delay control to 0°. These controls may need adjustment if your LFE program material must have a specific phase relationship to the main program material. If you are using

Event Direct Field Monitors, we recommend the settings found in the table on page 6.

• **Extending the low frequency response of your active monitoring system.** This works for mono, stereo, and 5.1. Instead of connecting your audio source directly to your active monitors, connect the source to the five monitor channel inputs on the 20/20 S250, and feed the pass-throughs from those inputs to your monitors. The five monitor channels are marked on the 20/20 S250 amplifier panel for convenience during wiring, but all of the five inputs are identical and are summed equally within the subwoofer. If you are using any speakers other than Event Direct Field Monitors, start with the Polarity Invert switch in the out (off) position, and set the Phase Delay control to 0°. If you are using Event Direct Field Monitors, we recommend using the settings found in the table on page 6.

Signals coming into the subwoofer via the five monitor inputs are muted with the Monitor Disable button. This mutes the Subwoofer if there's no LFE input.

• **Putting it all together.** The 20/20 S250 System Subwoofer is in full form in a 5.1 surround system where all five monitor inputs are used along with the LFE input. If you are using any speakers other than Event Direct Field Monitors, start with the Polarity Invert switch in the out (off) position and set the Phase Delay control to 0°. These controls may need adjustment if your LFE program material must have a specific phase relationship to the main program material. If you are using Event Direct Field Monitors, we recommend the settings found in the table on Page 6.

The Subwoofer's Phase Delay control is also used to maintain good crossover alignment when the Subwoofer can't be placed on the circle. Notice the OFFSET column below. Refer to it when the subwoofer must sit outside the circle.

Event Monitor	Sub Offset Outside Circle	Monitor - Sub Crossover Frequency	Polarity	Phase Delay
20/20 <i>bas</i> PS8 • TR8	0	35Hz	Invert	0°
	+3'	35Hz	Normal	120°
	+6'	35Hz	Normal	80°
	+9'	35Hz	Normal	20°
PS6	0	40Hz	Invert	100°
	+3'	40Hz	Invert	+60°
	+6'	40Hz	Invert	0°
PS5 • TR5	0	50Hz	Invert	70°
	+3'	50Hz	Invert	100°
	+6'	50Hz	Invert	60°

Figure 1. Recommended settings for using the 20/20 S250 System Subwoofer with Event monitors.

Care and Maintenance

Your 20/20 S250 System Subwoofer is simple to care for and maintain. The cabinet is finished with a durable vinyl laminate that can be cleaned with a soft damp cloth. Avoid touching the exposed speaker element. Do not expose the rear panel controls, connectors, or the speaker element to moisture or chemicals. Do not expose the unit to dripping or splashing liquids; objects filled with liquids should not be placed on the unit.

The circuit breaker is located just below the power switch on the 20/20 S250 amplifier panel. If it opens, you can reset it with a push. If it remains open, please refer the unit to service to qualified personnel.

Caution: When the power switch is off, the internal amplifier components are still connected to the AC mains.

Contacting Customer Service

If you experience any trouble with your 20/20 S250 System Subwoofer, please call the Event Electronics Customer Service department at 805-566-7777, ext. 5. Before calling, however, we ask that you please consult the Technical Support section of our Web site, www.eventelectronics.com.

If you believe your 20/20 S250 System Subwoofer is in need of repair, please contact the Event Electronics Customer Service department to request a Return Authorization Number (RA#). We can accept for servicing only those units that are accompanied by an RA#. Units shipped without an RA# number will be refused.

20/20 S250 System Subwoofer Specifications

Low Frequency Driver: Long-throw 15" coated paper cone with foam surround and high-temperature voice coil

Frequency Response: 28Hz – 120Hz, -3dB

Amplifier Power: 250W, Linear

LFE Crossover: -3dB at 120Hz, 3rd order

Monitor Blend Crossover -3dB, variable 30Hz – 80Hz, third order

Maximum Sound Pressure Level: 117dB peak @ 1 meter

Noise: >100dB below full output, 1kHz BW

Inputs: One LFE channel, five mains monitor channels. All inputs 40k ohm balanced via gold combination XLR-1/4" connectors

Monitor Input Sensitivity: 1.1V at any Monitor Input produces full output with Monitor Group Input Sensitivity control at maximum.

LFE Input Sensitivity: 0.35V at any LFE Input produces full output with LFE Input Sensitivity control at maximum

Pass-Through Outputs: One LFE channel pass-through, five mains monitor channel pass-throughs, all via male XLR connectors

Controls: LFE Input Sensitivity, Polarity Invert, Phase Delay, Monitor Group Input Sensitivity, Monitor Input Disable, Monitor-Sub Crossover Tuning, Mains Power

20/20 S250 System Subwoofer Specifications (cont.)

Indicators: Power ON/Overload LED

Power Requirements: 300VA, factory programmed for either 120V~ 60Hz, 220-240V~ 50-60Hz, or 100V~ 50-60Hz mains

Polarity: Positive signal at any + input produces outward LF cone displacement (with Polarity Invert off)

Cabinet: 3/4" vinyl-laminated MDF, internally insulated

Dimensions: 20.25" W x 17.5" H x 17" D

Weight: 64lbs

Specifications subject to change without notice.

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