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Nuance
select

USER GUIDE

Radial® engineering

TrueToYourMusic

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RADIAL NUANCE SELECT

USER GUIDE

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Thank you for purchasing the Nuance Select, a completely transparent monitoring system designed to give you total control over your studio setup.

We recommend you take a few minutes to read this short manual before you begin using the Nuance Select, as it covers the various features of the controller as well as tips for setup and use. Should you have any questions about this product, please visit our website at www.radialeng.com for additional resources and frequently asked questions.

OVERVIEW

The Nuance Select was designed with one driving principle in mind: transparent operation that doesn't color or affect the source material in any way. If you are involved in music production, you need to trust that what you are hearing through your speakers is an accurate representation of the sound coming from your audio interface — the sound that you've worked hard to achieve.

It would be counterproductive to add a monitor controller to your setup that provides helpful features at the expense of adding distortion or coloration that affects how you hear the mix. This is why every effort has been made for the Nuance Select to sound like it's not even in the signal path.

A unique patented circuit design has resulted in an astounding <0.00001% Total Harmonic Distortion through the balanced outputs of the Nuance, lower than some audio test equipment can register. The 100% Class-A signal path is built without the use of capacitors, employing DC servos throughout, and it features a true stepped attenuator for the main level control.

If you have previously used other monitor controllers, we believe the Nuance Select will surprise you with its clarity and detail. You will get all the benefits of being able to switch between input sources, monitor and subwoofer outputs — all while sounding as if you have made a straight-wire connection directly from your interface to the speakers.

FEATURES - FRONT PANEL

1. **SRC 1 & SRC 2:** Determines which set of Source inputs will feed the Speaker and Sub outputs. Only one of these switches can be selected at a given time.
2. **MONO:** Sums the left and right channels to mono for the A & B Speaker outputs. This switch does not affect the Headphone or Aux outputs.
3. **MUTE:** Cuts all signal to the Speaker and Sub outputs. This switch does not affect the Headphone or Aux outputs.
4. **DIM:** Reduces the volume by -15dB through the Speaker and Sub outputs. This switch does not affect the Headphone or Aux outputs.
5. **A & B:** Selects which set of Speaker outputs is active. Only one of these buttons can be selected at a given time.
6. **SUB:** Activates the mono Sub output when selected. The Sub output is a full bandwidth output with no frequency rolloff.
7. **LEVEL:** Sets the overall output level of the Speaker and Sub outputs. This control does not affect the Headphone or Aux outputs.

FEATURES - FRONT PANEL CONTINUED

8. **HP 1 & 2 LEVEL:** Sets the signal level at the headphone outputs. Each pot controls the corresponding left or right headphone output on the front panel of the Nuance Select.

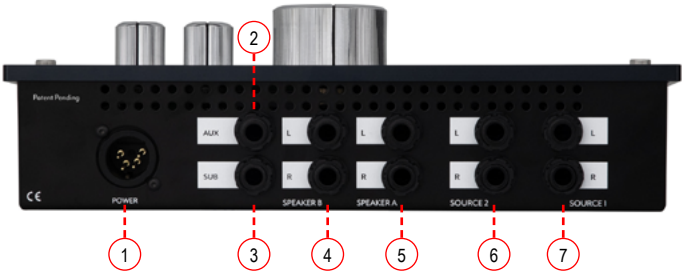
9. **SRC 1/2:** Selects the input source for each of the headphone outputs. When the button is illuminated, the corresponding headphone output will be fed from the Source 2 inputs. When the button is not illuminated, Source 1 feeds that headphone output.

10. **PHONES:** Activates both headphone outputs when selected. When the button is not illuminated, the headphone outputs will be muted.

11. **AUX:** Selects the input source for the Aux output. When the button is illuminated, the Aux is fed directly from Source 2. Otherwise the Aux will be fed from Source 1.

12. **HEADPHONE OUTPUTS (FRONT PANEL):** ¼" TRS jacks allow up to two sets of headphones to be connected for local monitoring.

FEATURES - REAR PANEL



1. **POWER:** Locking connection for external Radial power supply.
2. **AUX:** Stereo unbalanced TRS output for connection to external headphone amps or other devices. The Aux output takes a direct feed from either Source 1 or Source 2, depending on the setting of the top panel Aux switch. The signal level at the Aux output will be fixed at -6dB lower than the selected input source.
3. **SUB:** Balanced line-level mono output for feeding a powered subwoofer or power amp. This is a full-bandwidth output.
4. **SPEAKER B:** Balanced line-level left and right outputs for connection to a secondary set of powered studio monitors or power amps.
5. **SPEAKER A:** Balanced line-level left and right outputs for connection to the primary set of powered studio monitors or power amps.
6. **SOURCE 2:** Balanced left and right inputs for connection to the secondary (or cue) outputs from an audio interface or mixing console.
7. **SOURCE 1:** Balanced left and right inputs for connection to the primary outputs from an audio interface or mixing console.

MAKING CONNECTIONS

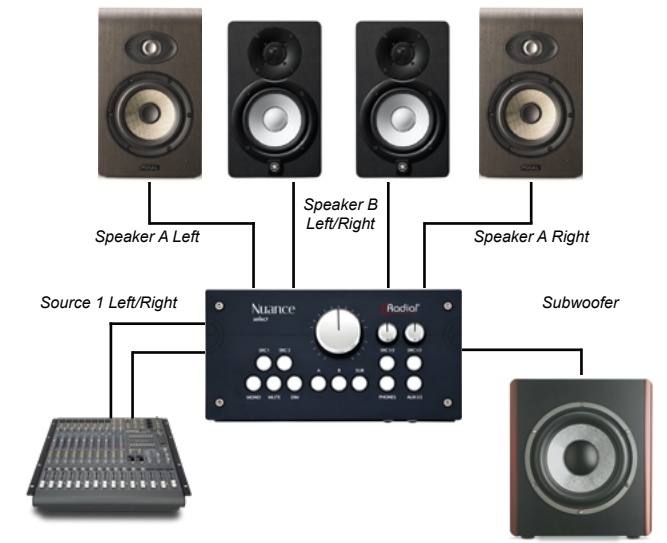
Before plugging your studio monitors into the Nuance Select for the first time, we recommend turning off all speakers or their associated power amps in order to prevent the occurrence of high output transients or other power-on noises through the system.

All of the rear panel inputs and outputs utilize ¼" TRS connections. Use balanced TRS cables to connect to your playback sources, speakers and subwoofer, or use TRS to XLR adaptor cables if necessary. If you plan on connecting the Nuance outputs to a device with unbalanced inputs, please refer to page 10 of this manual for more detailed wiring instructions.

The Source inputs on the Nuance are designed for connection to line-level playback devices such as mixing consoles or audio interfaces, while the Speaker and Sub outputs are meant to feed the line-level inputs of powered monitors/subwoofers or power amplifiers.

The Aux connection is a stereo unbalanced output that can be used to feed signal through to an additional device such as a headphone amplifier. Please see the related section for this feature on page 9.

Once you have connected your inputs, speakers, and subwoofer, power on the Nuance Select by connecting it to the included 15V power supply, then power on your speakers and subwoofer. There is no On/Off switch on the Nuance - once it is receiving power the Mute switch will illuminate for 5 seconds and then the unit will be ready for use.



USING THE MONITOR CONTROL SECTION

The SRC 1 and SRC 2 buttons on the Nuance top panel are used to determine the active input source for the Speaker and Subwoofer outputs. One of these outputs will always be active, and you can toggle between the two as necessary.

We recommend connecting your main mix to Source 1, and using Source 2 for an alternate mix, reference track, or a cue mix.

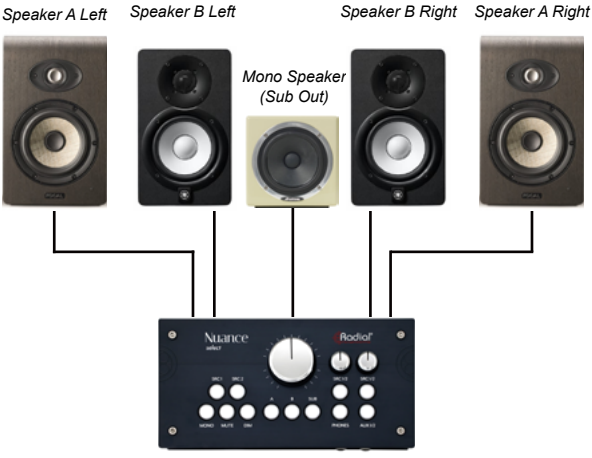
The Mono, Mute, and Dim switches will only affect the Speaker and Subwoofer outputs. Mono sums the left and right channels together so you can check for phase correlation within the mix, and Mute cuts the signal entirely to the speakers and sub.

The Dim switch lowers the output level to the Speakers and Sub by -15dB, so you can listen at a lower volume or speak with someone in the control room without having to alter the setting of the main level control.

The A, B, and SUB switches allow you to choose which speaker combination you are monitoring at any given moment. The A and B switches toggle between the two sets of speaker outputs (only one set can be active at a time), while the SUB switch operates independently, so it can be active with either speaker pair.

You can also turn off the active set of speakers by pressing their respective switch while it is illuminated - this gives you the opportunity to monitor the Subwoofer output on its own.

Since the Sub out is a full bandwidth output that can be independently monitored, you can use it to connect to a mono speaker instead of a subwoofer. This can be useful if you wish to use two sets of stereo speakers along with an additional 'sound cube' style mono speaker for checking midrange balance or translation on mass-market speakers.



Using the Sub output to feed an additional speaker

With this setup, whenever you need to check your mix on the additional mono speaker simply press the illuminated A or B switch to turn off the main set of speakers. Then activate the Sub output. When you are ready to switch back to your stereo speaker outputs, first deactivate the Sub and then press either of the A or B switches to feed the desired speaker set.

The Nuance Select uses a customized 21-position pot for the main level control, with individual resistors to provide left-right level matching within 0.1dB at all steps. Unity gain is achieved when the pot is turned fully clockwise, and attenuation is provided in approximately 2dB increments.

When setting up the Nuance Select with your monitors for the first time, start with the Level control turned fully counter clockwise and slowly bring up the volume once playback begins.

Once you've reached the desired output level through your speakers, you can use the Dim and Mute switches to lower or cut the volume as needed without having to readjust the Level control.

When you are ready to power down the Nuance between sessions, you can leave the Level control where it is and simply activate the Mute switch before disconnecting the Nuance from power. Whenever the Nuance is powered on again, the Mute switch will automatically activate for five seconds, preventing any unwanted noise through the connected speakers.

USING THE HEADPHONE SECTION

The Nuance Select features two built in headphone amplifiers, each with their own independent level controls and source select switches to provide added flexibility for recording overdubs in the control room.

The two ¼" headphone outputs are located on the front panel of the Nuance, with the left output corresponding to the left set of controls on the top panel.

The SRC 1/2 switch selects which input source feeds each set of headphones.

When this switch is unlit, the headphone output associated with it will be monitoring Source 1. When the switch is illuminated, Source 2 will feed that headphone output.

These individual controls allow for easy overdub recording with an artist in the control room. For example, the engineer can monitor the main mix on a pair of headphones set to Source 1, while the artist can hear their own cue mix while tracking by setting their input select switch to monitor Source 2.

Two sets of headphones can be independently paired with either input source

We recommend turning the headphone level all the way down before beginning playback to protect your hearing. Then activate the PHONES switch to turn on both headphone outputs and slowly increase the level using the control knob.

Whenever you aren't listening through headphones, you can use the PHONES switch to mute the headphone outputs and avoid having to readjust the headphone level controls.

THE AUX OUTPUT

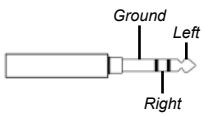
The Aux output on the Nuance allows you to feed either input source through to another audio device, such as a headphone amplifier located in a separate live room.

The AUX 1/2 switch selects which input source feeds the Aux output. This switch works the same way as the headphone SRC 1/2 switches function – when unlit, Source 1 will feed the Aux. Once this switch is pressed and illuminated, Source 2 will feed the Aux output.

The Aux output is unaffected by any of the other controls on the Nuance Select, so it will continue to pass signal even if the speaker outputs are muted and the headphone outputs are turned off. Whichever source is selected using the AUX 1/2 switch will pass directly to the Aux output jack at a fixed level -6dB lower than the original input source.

The rear panel Aux output jack is a stereo unbalanced output, where the Left channel is carried on the tip of the TRS jack, and the right channel is carried on the ring. If your destination device has a 1/4" TRS stereo input like many headphone amplifiers, you can use a standard TRS cable to connect the Nuance directly to it. For other devices with discrete left and right input jacks, use a 1/4" TRS to dual 1/4" TS stereo insert cable.

Using the Aux Out to feed a remote headphone amp



The Aux Out is wired as Tip = Left, Ring = Right, and Sleeve = Ground

WIRING GUIDE FOR THE SPEAKER OUTPUTS

The Nuance Speaker Outputs are 1/4" TRS connections that are optimized for feeding balanced TRS or XLR inputs on a pair of powered monitors or power amplifiers. When connecting to balanced devices, your cables should be wired Tip = Hot (+), Ring = Cold (-), and Sleeve = Ground (see Fig. 1 below). Should you encounter a ground loop that causes humming through your speakers, you can disconnect the ground at the destination end of the cable (Fig. 2).

However, there may be certain instances where you would like to connect the Nuance to devices with unbalanced inputs, such as 1/4" TS connectors.

In these cases you should avoid connecting unbalanced TS connectors to the Nuance Speaker Outputs. Doing so will short out the signal on the Ring of the TRS jack, which could result in increased distortion. Instead, you can use TRS jacks with the Ring conductor disconnected, as shown in Fig. 3 below. TRS to TS adaptor cables should also be avoided unless you can confirm that the Ring on the TRS is disconnected.

Note that these instructions apply to the Speaker Outputs only. The Nuance Source Inputs can accept both TRS or TS jacks without issue, though we recommend using balanced cabling where possible for best results.

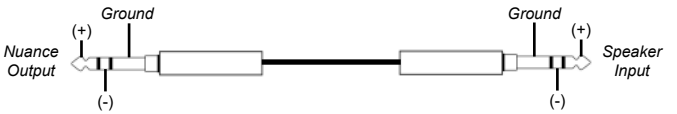


Fig. 1: Typical wiring between the Nuance Outputs and balanced inputs

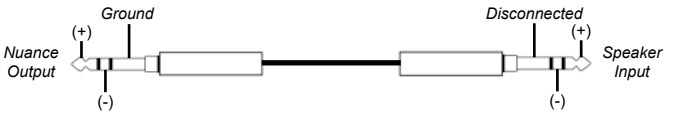


Fig. 2: Optional wiring between the Nuance Outputs and balanced inputs if a ground loop is encountered

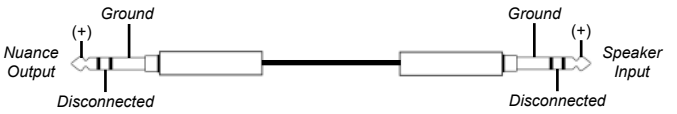


Fig. 3: Wiring for connecting the Nuance Outputs to unbalanced inputs

SPECIFICATIONS

Frequency Response: ..... 2Hz - 200kHz ±0.25dB @ +4dBu
Maximum Input: ..... +27dBu
Maximum Output: ..... +26dBu
Input Impedance: 20kΩ
Output Impedance: 112Ω
Total Harmonic Distortion: ..... <0.00001%, -140dB, balanced outputs 1kHz @ +18dBu
Total Harmonic Distortion + Noise: ..... 0.00012%, -118dB
Intermodulation Distortion: ..... 0.00007%, -123dB
Signal to Noise Ratio: ..... 125dB, 127dB A Weighted
Crosstalk: ..... -125dB @ 1kHz, -110dB @ 10kHz

Headphone Amplifier

Total Harmonic Distortion: ..... 0.00012%, -118dB
Total Harmonic Distortion + Noise: ..... 0.0003%, -110dB
Signal to Noise Ratio: 112dB
Output Impedance: 2.5Ω
Output Power: ..... 33mW x 2 @ 22Ω, THD+N<1%
100mW x 2 @ 68Ω, THD+N<1%

General

Construction: ..... Milled Aluminum faceplate, 18-gauge steel chassis
Size: ..... 10" x 5.25" x 3" (254 x 133 x 76mm)
Power: ..... +-15V, +5VDC, 29W max (included)
Conditions: ..... For indoor use at temperatures between +5°C and +40°C
Warranty: ..... Radial 3-year, transferable

Specifications are subject to change without notice

Please record the serial number for your Nuance Select here for future reference. Serial #: _____

In order to meet Electromagnetic and Safety Compliance requirements Radial Engineering is recommending to use the Nuance Select product with the provided R800 9414 00 power adapter, Model: GPSN25A - 14E, Input: 100-240V, 50/60Hz, 0.8A, Output 5V, 2.5A, Elgintek Power Supply, considering all Electromagnetic and Safety compliance was performed using only this power adapter. The R800 9414 00 power adapter features a universal power cord input for ease of use in any region worldwide, CE, FCC, PSE, cULus E206808 listed.

THREE YEAR TRANSFERABLE LIMITED WARRANTY

RADIAL ENGINEERING LTD. (“Radial”) warrants this product to be free from defects in material and workmanship and will remedy any such defects free of charge according to the terms of this warranty. Radial will repair or replace (at its option) any defective component(s) of this product (excluding finish and wear and tear on components under normal use) for a period of three (3) years from the original date of purchase. In the event that a particular product is no longer available, Radial reserves the right to replace the product with a similar product of equal or greater value. In the unlikely event that a defect is uncovered, please call 1-800-939-1001 or email service@radialeng.com to obtain a RA number (Return Authorization number) before the 3 year warranty period expires. The product must be returned prepaid in the original shipping container (or equivalent) to Radial or to an authorized Radial repair center and you must assume the risk of loss or damage. A copy of the original invoice showing date of purchase and the dealer name must accompany any request for work to be performed under this limited and transferable warranty. This warranty shall not apply if the product has been damaged due to abuse, misuse, misapplication, accident or as a result of service or modification by any other than an authorized Radial repair center.

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To meet the requirements of California Proposition 65, it is our responsibility to inform you of the following:
WARNING: This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.
Please take proper care when handling and consult local government regulations before discarding.

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