

Sound Devices 302 Quick Set-up Guide

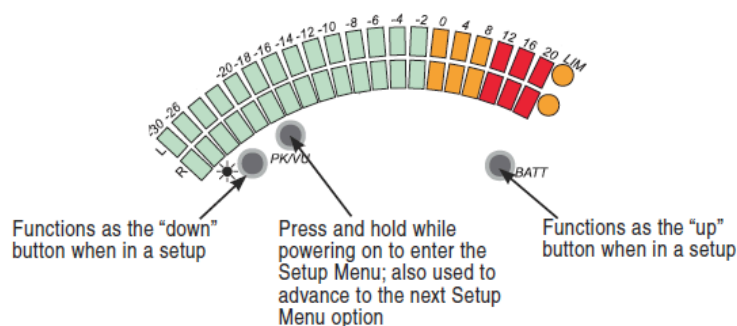
--Andrew Garrison, Dept RTF, the University of Texas at Austin

Full details are available in the Sound Devices 302 user guide available online from the Sound Devices website.

First—Return setting to factory default.

Like its cousins the 744T and the 442, the 302 has menu items you cannot see that may have been changed by a previous user. The first thing to do is return to the factory default.

All menu items are accessed from the electronic menu. Start with the 302 off, press and hold the LED brightness button and the PK/VU button right below the LED meters. While holding these two buttons down, turn on the mixer.



The meter lights will do the “scrolling dance,” then the 0dB lights will stay on and the -30dB light for the Left(upper) meter will be blinking. You are now in the set-up menu.

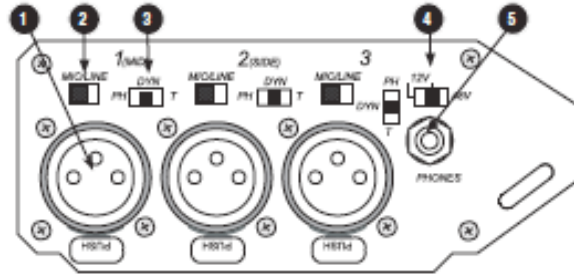
To restore all functions back to factory defaults (Line out, 1K tone, input limiter engaged, etc.) press the PK/VU button 17 times until the +12dB light on the Left(upper) meter is blinking red. Then press the battery check button (under the HP light) twice so that the -24dB light for the Right (Lower) meter is illuminated green. Save this setting to memory by pressing the PK/VU button multiple times until the meter lights do their happy scrolling dance again and then go dark. One press may be enough, but if not, press again.

The complete set-up menu can be found on page 22 of the sound Devices User Guide. The Left(Upper) meter is always the area or domain in which you are working and the Right (Lower) meter is the actual setting value.

Now simple set up

Set the input switches (#2 in the next diagram) at the Input Bus on the left side to mic or line, as appropriate. Plug in your source’s cable--the microphone or wireless.

Input Panel Descriptions



- 1. XLR Inputs**
Transformer-balanced channel inputs. Pin-1 = ground; pin-2 = 'hot'; pin-3 = 'cold'. Can be unbalanced by grounding pin-3 to pin-1 of the XLR connector.
- 2. Mic/Line Channel Switch**
Selects the input level of the adjacent connector. Mic level has 40 dB more gain than line level.
- 3. Phantom/DYNAMIC/T-Power Selection**
Selects the microphone powering type of the adjacent input. DYN position turns off all microphone powering. Mic powering is selected per input. NOTE: Use T-Powering only for T-Powered microphones.
- 4. Phantom Voltage Selection**
Selects between 48 V or 12 V phantom voltage for all input channels. The three-position switch uses two positions for 12 V, there is no difference between these positions.
- 5. Headphone Output**
3.5 mm TRS stereo headphone output. Can drive headphones from 8 to 2000 ohms to required monitoring levels.

If your mic is a condenser mic, you'll need to power it. Either move the "Phantom/DYNAMIC/T-Power Selection" switch (#3) to "PH," or use a battery pack for the microphone in line with the XLR cables. Most condenser mics use 12-48v phantom power. A few use "T" power. Your mic will probably say "T" or "A-B" somewhere on its body if it needs "T" power

Select DYN if your mic is dynamic, or if you are using a wireless system (if the AF is set high enough on the wireless) or a condenser mic that is getting power from a battery pack.

The last switch on this side. # 4 is the "Phantom Voltage Selection." Many condenser microphones will work with 12 volts of power. Start with 12v and if that doesn't do it, switch up to 48v. 48v will not hurt a mic that can use 12v. The Phantom Voltage Selection is a three-position switch. The first two positions are both 12v. The third position is 48v.

*(Note: A-B powered mics need a phase-inverting cable) (also note: it IS possible to damage a T-powered mic by using the wrong phase. Find out about your mic if you have any doubt, before you plug it in)

Sending Out

The default setting for the outputs is Line out impedance. This is what you will need 90% of the time. There are few instances when you might need to send something out at a lower, mic-level impedance. If you find you need to do this (maybe you are sending the signal to a wireless transmitter that only has mic level inputs), you can change the output level in the same setup menu you just used. The correct

SETTING UP THE FRONT

This is a general setup. You will need to adjust for specific situations.

Set the Pan switches for each input. This determines which channel OUT you are sending your signal to. You can send each of the three input channels to Left (ch1), Right(ch2), or to both or Center.

Send tone to the camera or recorder. Your output cables are attached to the input of a camera or recorder. The 302's default output impedance is Line level at 0dBfs.

At the camera or recorder you will need to select "Line" for the input. Since you have pushed on the tone switch on the 301 (#8 in the chart) the camera or recorder should be receiving a 1Khz tone. On the camera, you need to adjust the input gain until that steady tone is coming in at about -12 to -16 dB. This means that the signals you see on meters on the 302 at full scale, 0dB, are coming into the camera at 12dB to 16dB lower level. You are leaving a little "head room." It will not keep you from clipping on the mixer, but it will keep you from clipping on the mixer and the clipping *again* on the camera or recorder.

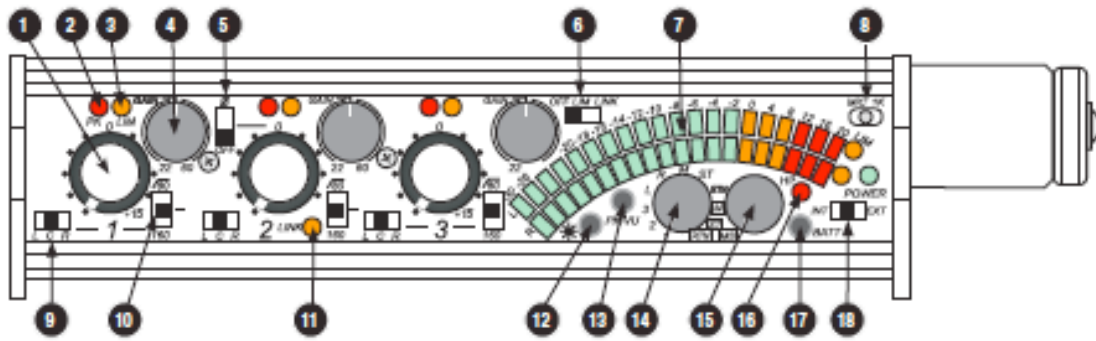
Now turn the tone off. Watch the meter at the mixer and the recorder will follow. You should still check your first recording of the day to make sure everything is all right. Check the recorder or camera several times during the day's work to make sure your settings have not been accidentally changed.

Setting the Mixer Meter

Our recommendation is peak-hold/VU. Press the PK/VU button four times to get to this setting. If you push on the slate mic for a moment (same switch, #8, as for tone but the other direction) and talk, if you have the meter in peak-hold/VU, you will see a group of lights come on and change with your voice but the farthest right light, the peak, will hold for a moment, and then slowly "decline," as the rest of the meter is showing your average loudness.

Next page is a chart taken directly from the 302 User Guide.

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1. Fader

Primary control for adjusting the input level during operation.

2. Peak LED

When illuminated, indicates that the channel level is approaching the clipping point.

3. Limiter LED

When illuminated, indicates that the channel limiter is active and is reducing the channel gain to prevent overload.

4. Gain (Trim)

Coarse input gain control. Sets the initial input sensitivity level so that the Fader can be used for fine gain adjustments.

5. Polarity Reverse Switch – Input 2

When engaged, the polarity of Input 2 is reverse (180° out-of-phase) with respect to inputs 1 and 3. Useful to flip the stereo image with MS stereo.

6. Limiter Switch

Activates both input and output limiters. ON is dual-mono limiter operation, LINK is stereo operation. Output limiter threshold is set in the Setup Menu.

7. Output Meter

Sunlight-viewable, 20-segment LED meter. Calibrated in dBu when peakreading.

8. Slate Mic/Tone Switch

Two-position switch, activates the slate microphone in the left (momentary) position, or the tone oscillator in the right (latched) position. Additional options are available in the Setup Menu.

9. Pan Switch

Assigns the input channel to the output bus. Left-only, Center (equal left and right), or Right-only.

10. High-Pass Filter (Low Cut)

Three-position switch engages the highpass filter. Used to reduce excessive low frequencies. 12 dB per octave at 80 Hz or 160 Hz. Center position is off.

11. Stereo Link LED (Inputs 1 & 2)

Indicates that inputs 1 and 2 are linked as a stereo pair. Controlled in the Setup Menu. In L/R stereo link input 2 Fader controls overall stereo level. When in MS position input 1 Gain (Trim) controls Mid, input 2 Gain (Trim) controls the amount of stereo (Side) information and the input 2 Fader controls the overall MS stereo level.

12. Meter Brightness

Controls the brightness of the LED output meter. Each push selects among the four brightness levels.

13. Meter Ballistics

Toggles among the available meter ballistic options: VU-only, peak-only, combo peak/VU, peak-hold/VU.

14. Headphone Selector Switch

Sets the signal source sent to headphones. Options include: input PFL 1, 2, 3; left output bus; right output bus; Mono (summed left and right); STereo master; RTN - stereo monitor return; MS-mono; MS-stereo; RTN-MS.

15. Headphone Volume

Adjusts the overall volume of the headphones. NOTE: the headphone output is capable of ear-damaging levels. Take care when adjusting among signal sources.

16. Headphone LED

Indicates signal overload in the headphone and RTN circuits.

17. Battery Check Button

Press and hold to display the internal and external battery levels on the output meter. Battery level remains for two seconds after button release

18. Power Switch/LED

Three-position switch, selects between internal battery power or external DC sources, middle position is off. Power LED illuminates when power is on. LED flashes when voltage reaches low limit.

Limiter and Link

Turn on the Limiter! It is your friend. Switch #6. It is on for all three faders when you turn this on. Note: ON is the middle position for the switch, not LINK.

LINK is a control for when you want to adjust the gain of two microphones at the same time, such as in stereo recording. When "LINK" is selected, Fader 1 controls the gain for both Input 1 and Input 2.

Headphone Selector

Gives you different ways to listen to the signals coming. This does not change what is going to the recorder. Generally you will leave it on ST (Stereo), switching to other choices as needed. ST sends the Left output to your Left headphone, and the Right output to your Right headphone. Read the User Guide to learn about the different choices.

Setting Gain

Start with the trim knobs (#4) at the 12 o'clock position. Listen to the subject or talent or sound source and adjust the fader knob (#1) until they are peaking at less than 0dB and lower sounds are above -30dB. As a rule of thumb, voice levels will land between about -20 and about -12, with louder exclamations reaching almost to 0dB.

If you find your fader knob is turned very far right or very far left, try turning the trim knob for that fader up or down to give you more range to work with the fader.

Low-End Roll Off/High Pass Filter

The 302 has two bass roll-off positions, 80Hz and 160Hz, and "flat" or no roll-off. Very little signal below 80Hz will ever be missed in recordings other than music. However, the goal of the production mixer is to affect the signal as little as possible.

Use 80Hz roll-off unless you are recording something where the low-end bass is critical, such as music. If you are experiencing so much low-frequency sound that it is creating problems for the regular signal, try using the 160Hz position.

Reverse Polarity

This inverts the phase for the signal coming into input 2 only. It is useful in Mics stereo recording to flip the stereo sides. For now, make sure the switch is in the down, off position