MU524 Setup guide

Follow the testing procedure in the shown order. If one test fails, find out the problem, correct it then resume.

Always unplug power between steps because it is very easy to create a short circuit when moving a DMM probe. And most of the time, shortcuts are fatal to the circuits.

Step		Description
1.	Board installation (without XT500)	Remove all other modules from your 500 rack or Lunchbox and insert the MU524 into the leftmost slot.
2.	Board installation (with XT500)	Connect the MU524 to your XT500.
3.	Initial configuration	☐ Bypass on centre position (bypassed). ☐ All push switches released (up). ☐ IN potentiometer on 10. ☐ OUT potentiometer on 0. ☐ REC. (release) pot on 10. ☐ Jumper JMP1 removed.
4.	Tube heater slow start test	☐ Set your DMM to DC Volts. ☐ Place the meter probes between the 2 side pins of the tube holder PCB, ☐ Power up the lunchbox and check that the voltage slowly increases from 1 to 2V as the tube gets hot then more rapidly to 6V after 10 seconds. ☐ Power off.
5.	Power voltages check	☐ Connect the black probe to test point 0V. ☐ Power up. ☐ Connect the red probe to test point V+. Check that you get a value between +15 and +16 Volts. ☐ Connect the red probe to test point V-. Check that you get a value between -15 and -16 Volts. ☐ Connect the red probe to test point B+. Check that you get a value between +45 and +48 Volts. ☐ Set the Bypass switch to IN and check that the dB meter lights up.
6.	Audio path check	☐ Connect a 1.0VAC, 1KHz sine source to the input. You can use your multitrack software (DAW) to play a sine tone like the one that is downloadable from the "Support/Downloads & Useful links" section on our website. ☐ Connect your DMM to the MU524, between pin 2 and pin 3 of the output XLR (XT500 pins 2&4). The DMM is set to AC Voltage. ☐ Set Bypass to the centre position (bypassed). ☐ Adjust the signal amplitude from the DAW in order to read 1.0 VAC on the DMM. ☐ Set Bypass to the left position (compressor on).

Step		Description
		☐ Check that the output voltage has risen to 3-4 VAC.
		☐ Turn the OUT potentiometer and check that it increases the output voltage up to 9VAC or more.
7.	Tube balance 1 (balance at no attenuation)	The tube must have been heating for 15mn minimum before doing the following adjustments. It is best not to turn off the power between these settings.
		☐ Set your DMM to DC volts and connect it between test pins TP1 and TP2.
		☐ Adjust TR2 (Bal1) in order to read 0 volts. Use the smallest voltage range on the meter for the best precision.
8.	Tube balance 2 (balance at -6dB attenuation)	☐ Set TR4 (Vref) all the way up, 20 turns CW (clockwise).
		☐ Set TR5 (Atn2) all the way down, 20 turns CCW (counter clockwise).
		☐ Set TR3 (Atn1) all the way down, 20 turns CCW (counter clockwise).
		☐ Place the jumper on JMP1 across pins 2-3 (pin 1 is identified by a white dot).
		☐ Set the DMM to AC volts and connect it the output, between pin 2 and pin 3 of the output XLR (XT500 pins 2&4). Adjust the OUT potentiometer in order to read 6.0VAC (do not touch the other potentiometers).
		☐ Adjust TR4 (Vref) until you read 3.0VAC.
		☐ Set the DMM to DC volts and connect it between test pins TP1 and TP2.
		☐ Adjust TR1 (Bal2) in order to read 0 volts.
9.	Side chain setup -3dB @ -2V	☐ Set the DMM to DC volts and connect it between test pins TP6 and 0V.
		☐ Adjust TR4 (Vref) in order ton read -2VDC on the DMM.
		☐ Set the DMM to AC volts and connect it to the output, between pin 2 and pin 3 of the output XLR (XT500 pins 2&4).
		☐ Remove the jumper and adjust the OUT potentiometer in order to read 6.0VAC on the DMM (do not touch the other potentiometers).
		☐ Place the jumper on JMP1 across pins 2-3 and adjust TR3 (Atn1) in order to read 4.25VAC on the DMM (3dB attenuation).
10.	Side chain setup -6dB @ -3.6V	☐ Set the DMM to DC volts and connect it between test pins TP6 and 0V.
		☐ Adjust TR4 (Vref) in order ton read -3.6VDC on the DMM.
		☐ Set the DMM to AC volts and connect it to the output, between pin 2 and pin 3 of the output XLR (XT500 pins 2&4).
		☐ Adjust TR5 (Atn2) in order to read 3.00VAC on the DMM (6dB attenuation).
11.	Meter setup	☐ Adjust TR6 (Meter) in order to read -6dB attenuation on the front panel meter.
12.	General check	☐ Place the jumper on JMP1 across pins 1-2.
		Send a musical program to the input and verify that all the front panel controls work as expected.
13.	Congratulations!	You're done!