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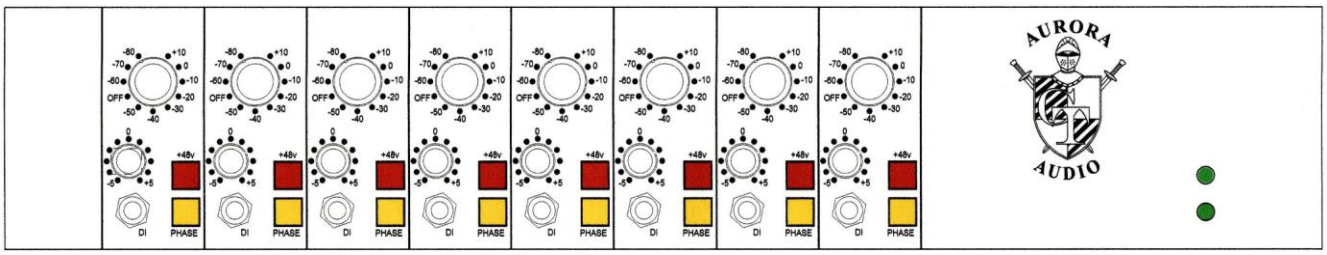

GTP10 Instruction Sheet

Introduction:

Well done for purchasing a hand-built, all discrete class A circuitry GTP10 eight channel microphone pre-amplifier! It is designed to give you years of superb sounds and service.

Unpacking Instructions:

Carefully remove the unit and power supply from the custom foam packing. The power supply automatically senses your local power voltage and can work between 85v and 265v. For safety and best noise performance always use a grounded 3 core / 3 pin a.c. cord.

If you connect the GTP10 to an unbalanced destination, wire to the XLR pins 2 and 3 only. Leave pin 1 high. This will help prevent ground loops.

The rear jack sockets are an unbalanced insertion at around -15dBu level.

Operating Guide:

The GTP10 can accommodate any signal you care to throw at it, including high-level line inputs. The sensitivity switch provides gain adjustment in 10dB steps from +80dB to –10dB and the +/- 5dB level pot allows for fine adjustments of level and also extends the gain range from +85dB down to -5dB.

It is possible to fit an external fader to the GTP10 by using the rear panel channel insertion jacks. A 10Kohm audio taper fader could be connected as follows :-

Fader top = tip, Fader wiper = ring, Fader bottom = sleeve

The channel insertion jacks are intended to be used with our 8 channel 4 band Equalizer and is not suitable for connecting to an external patch bay.

The D.I. input has 10 Megohm input impedance and around 10dB gain. It can be used (to great effect) with musical instrument pickups, but works equally well with high-level signals like a D.A.T. or CD player. If you insert a jack into the front jack socket it will automatically disable the signal from the rear panel XLR.

Illuminated switches are fitted to select phase reverse and 48v phantom power.

Using analogue equipment in a digital world!

E.G. Analogue versus Digital levels

In my technical/design background in analogue circuitry, spanning over 30 years, the levels of audio were calibrated in dBm, a throwback from the telephone and communications era where 0dBm was 1mW dissipated into a 600 ohm load = 0.775 volts. 0dBm was later changed for the more convenient 0dBu which is a voltage into any specified impedance.

In a broadcast studio, Peak Program Meters were used that were calibrated from 2 to 7. Mark #4 equated to 0dBu and Mark #6 equated to +4dBu.The level +4dBu is 1.228 volts a.c. and also the 0VU reference point on a VU meter. This is, coincidentally, #6 on the PPM meter and a typical line up level for an analogue tape machine.

Most consoles and pre-amplifiers have a maximum output level before clipping of around 26dBu. This gives them 22dB headroom above 0VU = +4dBu. Driving the console and pre-amplifier “hotter” than +4dBu output reduces the headroom proportionately.

At the other end of the scale, the consoles/pre-amplifiers usually have +80dB gain and produce noise figures in the –45 to –48dBu region and an Equivalent Input Noise of -125 to -128dBu. The noise floor from a 200 ohm source at 20 degrees C is –129dBu so the amplifier is adding 1dB of noise to the absolute noise floor. As the gain is reduced, the difference between the signal and the noise floor widens as the noise is pushed further down.

Reminder:- *Increasing the gain amplifies the signal AND raises the noise floor.*
Running the device at hotter levels than usual reduces the headroom.

In the digital world measurement criteria differ. Instead of using a reference level that relates to a particular power or voltage (like 0dBm) the 0dBf reference is the maximum signal that the analogue to digital converter can accept before the onset of clipping.

The 0dBf level is usually somewhere in the region of +18dBu to +24dBu in the analogue world…. It is **NOT** the same as 0VU (+4dBu) on an analogue VU meter.

It’s very important to use an A to D input level that maximizes the headroom and minimizes the noise in the analogue world.

E.G. *If an attempt was made to drive the console or preamplifier high enough to hit the 0dBf (+24dBu) reference level on the A to D, the amplifier would be running at over 20dB greater than it’s normal operating level. This raises the noise floor by 20dB (ten times louder) and reduces the analogue headroom to around 2dB. A microphone normally needing 40dB gain would need 60dB gain and any peaks would drive both the pre-amplifier and the A to D into clipping. Not good!*

Depending on the reference level recommendations of the A to D manufacturer, the analogue levels on its input should be typically around –18dBf. This will optimize both the signal to noise ratio and the headroom of the analogue signal. A degree of variance, say –16dBf, is acceptable but higher levels will begin to degrade the analogue performance with no improvement to the quality of the sound.

Specifications:

Input impedances : XLR Input = 1200 ohms.
Transformer balanced and floating

D.I Input = 10Mohm into a "super-transistor" class A amplifier.
Unbalanced mono jack socket input disables the rear XLR input.

Output impedance : < 50 ohms.
Transformer balanced and floating.

Frequency response : 20Hz to 50KHz ± 1dB ref 0dBu @ 1KHz

Input Headroom : >+26dBu

Total Harmonic Distortion: < 0.075% @ 1KHz @ +20dBu (Typically 0.025%)

Equivalent input noise: At +80dB gain < -125dB, typical -127dB
(Input terminated 200 ohms, measured 22Hz to 22KHz)
At 0dB gain noise is typically <-90dB

Warranty: ONE YEAR PARTS AND LABOR LIMITED WARRANTY

Aurora Audio LLC warrants this GTP10 unit against defects in workmanship for a period of one year and parts for a period of one year from receipt by the original end user. This warranty shall not apply to damage resulting from misuse including water damage, in-transit damage, fire damage, improper maintenance, dropping the unit and operation or storage outside the environmental specification for the product.

Do not try to repair this GTP10. Only qualified Aurora Audio LLC technicians are authorized to repair this unit. WARRANTY VOID IF CASE IS OPENED

ROHS Directives

The RoHS Directive stands for "the restriction of the use of certain hazardous substances in electrical and electronic equipment". This Directive bans the placing on the EU market of new electrical and electronic equipment containing more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants.

The restrictions took effect in the E.U from 1st July 2006.

It is very important that the owner of any piece of equipment that contains even microscopic amounts of the listed hazardous substances (in relation to the weight of the unit) realize that the responsibility of its disposal rests with them. The unit should not just be thrown away at the end of its lifetime, whether that's 10, 20 or 30 years hence.

Please contact us and we will provide you with the necessary information to return the unit to us for proper disposal.