Phantom Bal Mic Preamp+Gun Mic

By G8MNY  
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(8 Bit ASCII graphics use code page 437 or 850, Terminal Font)

Phantom powered Mic Preamp +12 to +48V with balanced 600Ω O/P Z.

Gain of each phase = R7orR8/10k  
Typical values R7=R8= 100k, gives 10x gain/phase, x20 overall gain (26dB).

The polarity of the C2 in series with the electret mic depends on the DC bias level needed for the particular mic capsule. So test the relative DC levels before inserting capacitor.

The value of R9 & R10 can be changed to better suit the phantom powering voltage e.g. 12V use 4k7, 48V use 22k.

LF tayloring can be incorporated if C2 in series with the mic can be reduced to about 0.1uF. Also the 2 O/P Cs (C5,C6) are reduced, values depend on external load.

WHAT DOES WHAT.

R11&R12 condition O/P Z to approx 600Ω, & supply some RFI & spike suppression.  
R9&R10 with C4 decouple the DC phantom IC supply from out going line AF.  
R2 with C1 decouple the DC supply for the mic.  
R1 supplies DC current to the mic.  
C2 passes mic AF into R5 load, & hence determines LF responce.  
R3,R4 & C3 provide a decoupled ½ DC rail bias point for the op amp.  
R5, R8 & R6, R7 provide the 2 opamp voltage Negative Feed Back, setting gain.  
C5 & C6 pass O/P AF into the line.
- ve PHANTOM POWER
If you phantom supply is -ve voltage, just re-connect R9 & R10 from C4 +ve to the bottom rail & rewire the earth to the +ve of C4. Reverse the polarity of C5 & C6.

SIMPLER PHANTOM POWERED CIRCUIT!

With this simple circuit DC is only taken from the live phantom. The capsules is insulated from its hum avoiding earthed surround shield. The 47K live to ground is a balancing R to ensure equal +/- signals.

MAKING A GUN MIC
If the Mic capsule is inserted tightly (sealed) into a long 30mm dia tube that has holes or slots made down it's length, a very directional gun mic is made, (over the frequency range where the sound waves are columnmated in the tube).

See also "DC sources for coax/AF" bul.

Why don't U send an interesting Bul?

73 de John G8MNY @ GB7CIP

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