

Figure 2. Four-channel panning circuit.

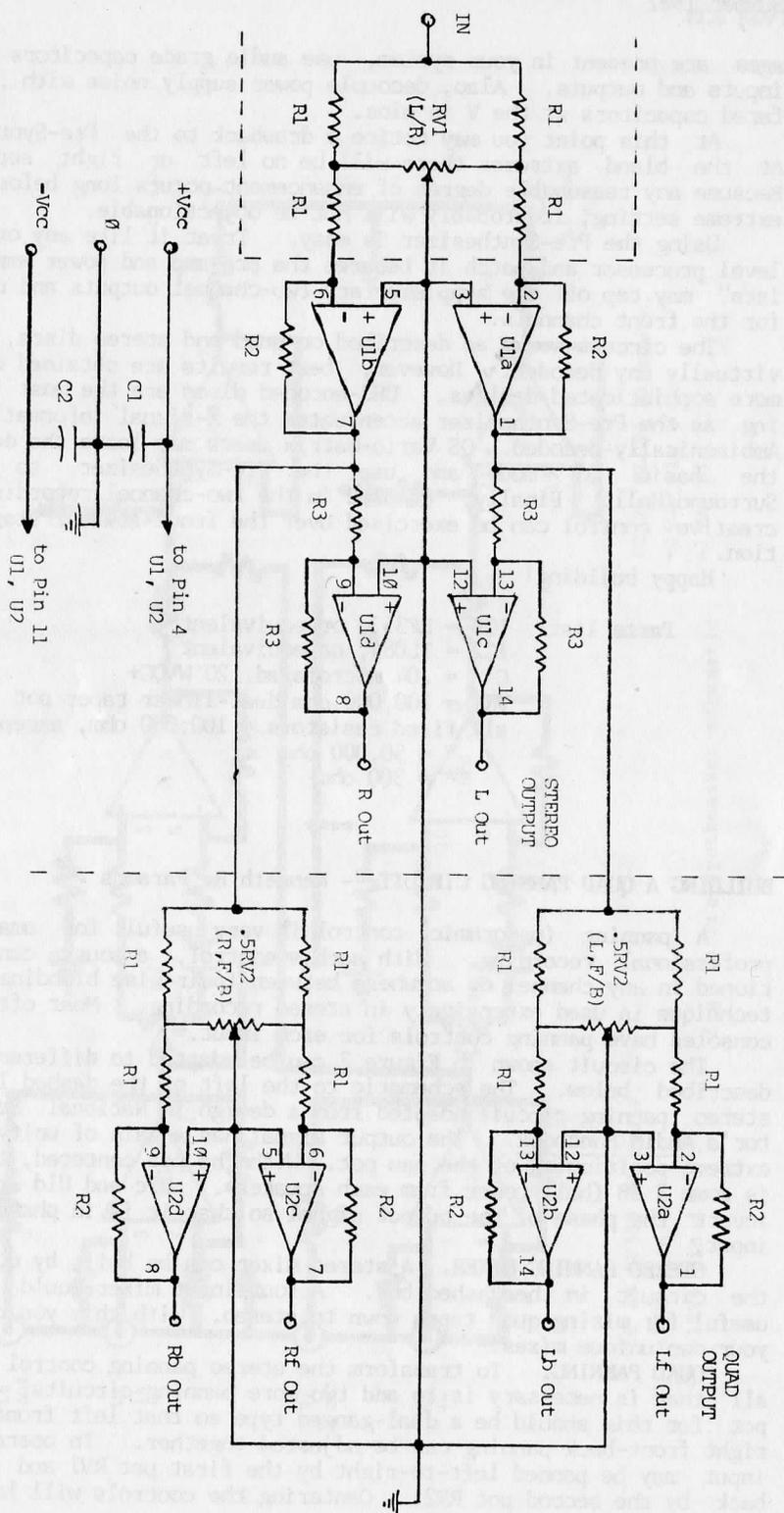


image midway among all four channels. The most obvious application for this circuit is to pan sounds around the room from speaker to speaker.

QUAD PANNING MIXER. Although not shown here, it is possible to build a quad panning mixer. Duplicate the left-right panning circuit and the input portion of the front-back panning circuit for the number of inputs desired.

CONSTRUCTION. First decide what functions you want the unit to perform; it is unnecessary to construct the portions of the circuit which are used for other functions. I built my unit on a 2"x6" piece of perf board. Using pots that can be mounted directly on the perf board greatly simplifies things.

Construction is not too difficult if the unit is built up in stages. Test each stage as you go. Build the stereo panning circuit and test its operation before proceeding. If stereo mixing is desired, add the necessary additional components (four R1s and one RV1 for each additional input) and retest the unit for each input. If quad panning is desired, build two more panning circuits and retest.

The unit requires a dual power supply of anywhere from +/-6 to +/-15 VDC. The use of such a power supply means that input and output coupling capacitors are not necessary, although if they are used they must be non-polar types. Direct coupling allows the unit to respond to low frequencies down to DC (0 Hz). The use of quad op-amps simplifies the unit; only two ICs are required.

- Parts list:**
- R1 = 36,000 ohm, 1/4-watt resistor
 - R2 = 120,000 ohm, 1/4-watt resistor
 - R3 = 100,000 (or 120,000) ohm, 1/4-watt resistor
 - RV1 = 25,000 ohm linear potentiometer (Bourns 1AA25K)
 - RV2 = 25,000 ohm dual linear potentiometer (Bourns 1BA25K/25K)
 - U1, U2 = TL074 quad bi-FET operational amplifier

STEREO AM, YES, SORT OF; QUAD FM, STILL NO WORD

As you well know, the Federal Communications Commission has been "considering" proposals to broadcast quad FM and stereo AM for many years now. As you probably also know, the Commission has fulfilled half its November 1981 pledge to issue a Report and Order on both these proceedings during the first quarter of 1982.

In March it adopted and released rules for the broadcasting of stereo AM (Federal Register, March 29, 1982). The stereo AM decision has been widely criticized for being no decision at all. Instead of choosing one system from among the five proposed, the Commission set broad parameters for stereo AM broadcasts which allow all five of the proposed systems to be used.

Unfortunately, the five are incompatible with one another, which means that, in some markets, a consumer may have to own five different stereo AM receivers to be able to receive any of the stereo AM broadcasts in that area. Nevertheless, the Commission declared that the "marketplace", not they, should decide which system should become the standard.

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