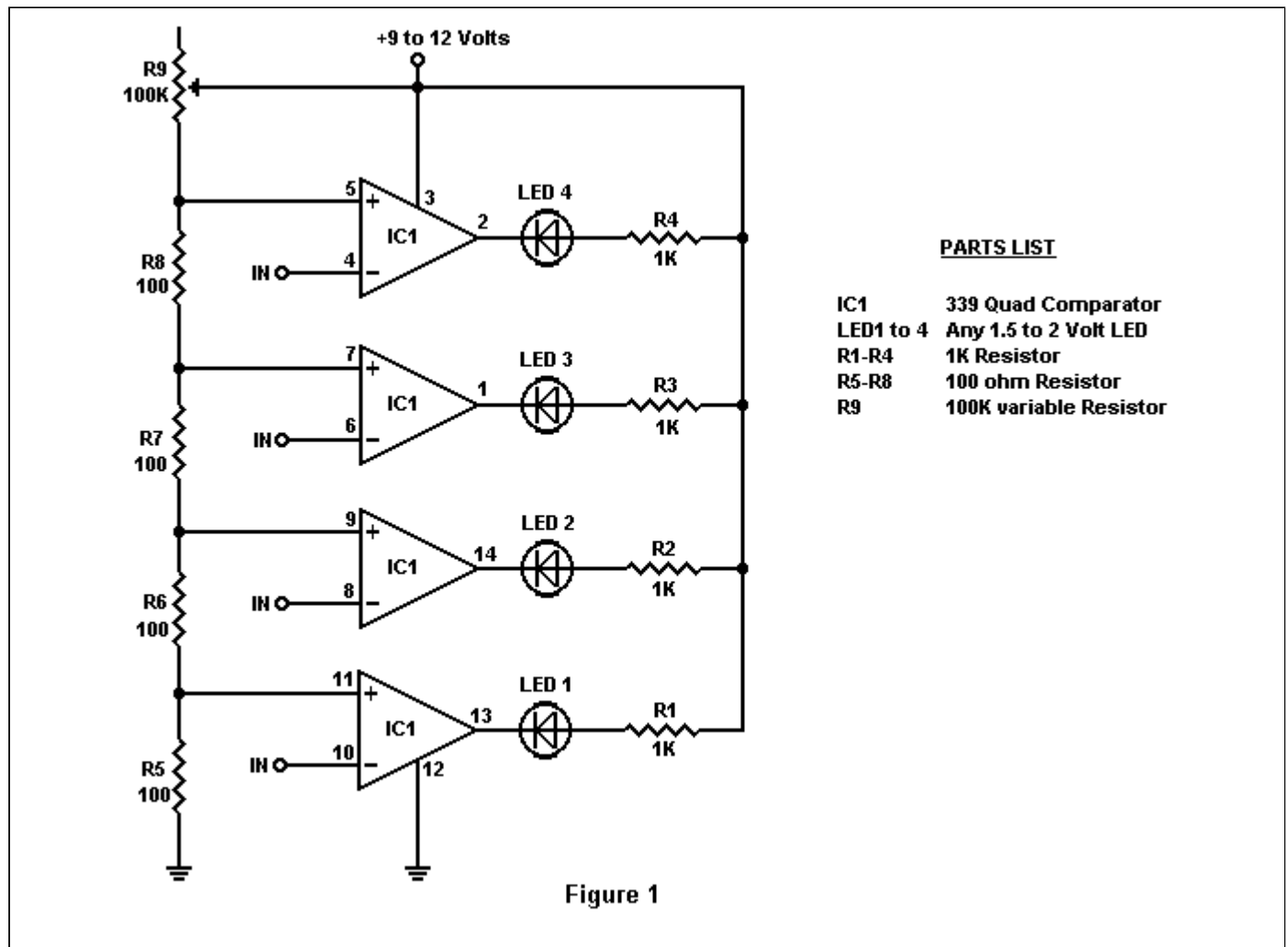


SIMPLE ELECTRONIC S METER BY Mike Martell N1HFX

Many amateurs who would like to add some type of S meter to their favorite QRP project are often stunned at the high cost of panel meters. Figure 1 provides a low cost alternative and helps to demonstrate operational amp principles. Although this S meter has only 4 leds, this is often enough to distinguish the weak from the strong signals.

This circuit is really a low-level voltage meter and could even be used for audio purposes. Pins 4, 6, 8 and 10 of IC1 are connected together and are connected to the AGC line or the input to the last audio stage. Adjust R9 for the desired sensitivity. Resistors R5 through R9 provide voltage references for each of the OP Amps. R5 has the lowest reference voltage while R8 has the highest. As the input voltage exceeds each OP amp's reference voltage, the output goes low causing the corresponding LED to light. R1 through R4 drops the voltage to allow the use of standard 1.5 volt LED's. If you absolutely have to use 12 volt LEDs then eliminate resistors R1 through R4.

DE N1HFX



PARTS LIST

IC1	339 Quad Comparator
LED1 to 4	Any 1.5 to 2 Volt LED
R1-R4	1K Resistor
R5-R8	100 ohm Resistor
R9	100K variable Resistor

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