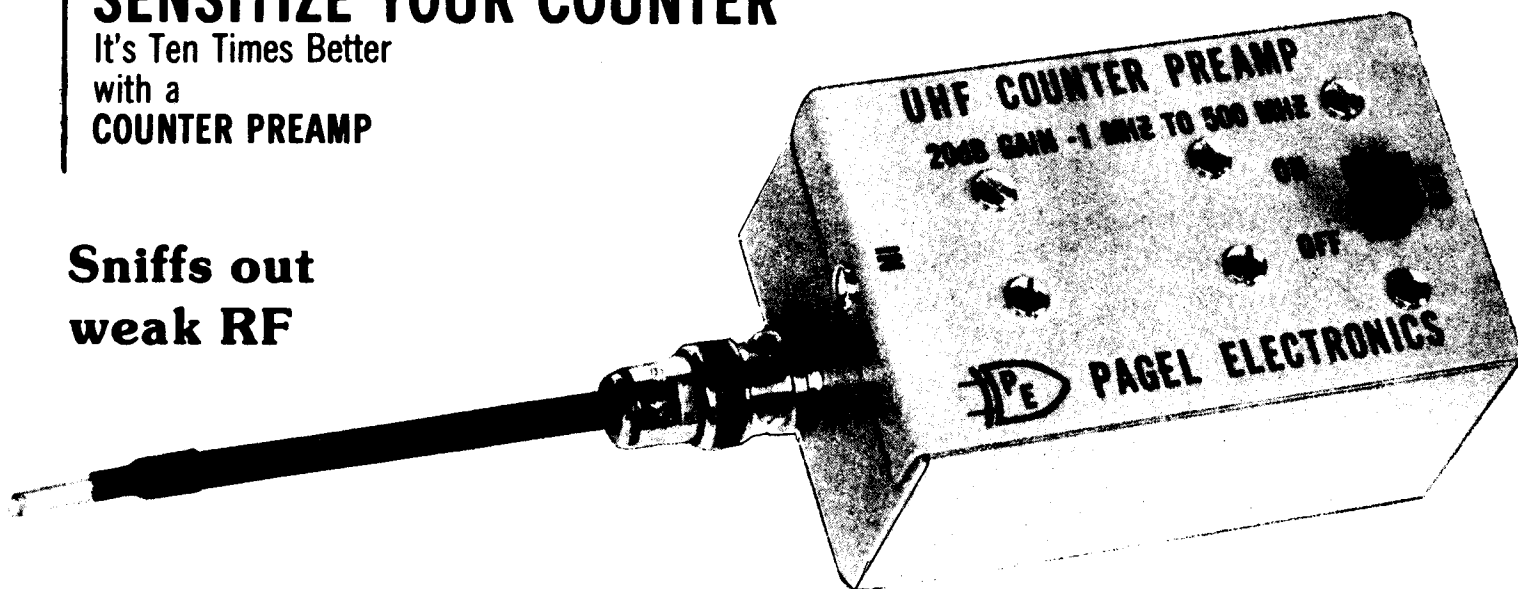


SENSITIZE YOUR COUNTER

It's Ten Times Better
with a
COUNTER PREAMP

**Sniffs out
weak RF**



VHF & UHF COUNTER PREAMPS

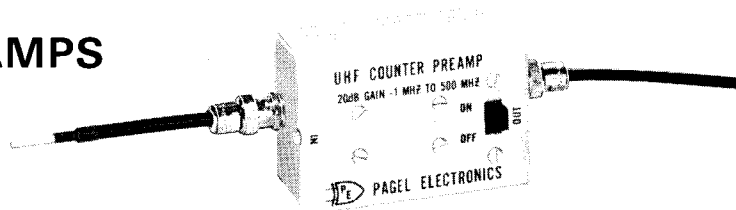
Measuring oscillator frequency on modern communications equipment is tricky business. Circuit density and accessibility problems can be frustrating if you try using clip leads, loops or coils. You might short out something or pull the oscillator off frequency with close coupling because there just isn't enough signal to drive the counter. Also the counter input cable itself may load the oscillator even though the counter is high impedance. The COUNTER PREAMPS are designed to solve these problems. They have 20 to 30 dB gain which increases the sensitivity of your counter at least ten times. The low capacity insulated probe can pick up the signal just by holding it near the oscillator crystal, coil, or any active component. Sometimes it is possible to read the oscillator thru a plastic case. Calibrate your counter by reading the chroma oscillator in your color TV set. Just hold the probe near the chroma coil or crystal, no connection necessary. (caution, avoid high voltage). Another serious problem when aligning receivers is that many signal generators shift frequency when the attenuator is moved from high output to drive the counter to the low output to make adjustments or check receiver sensitivity. The preamp will give 20 dB of isolation and eliminate error. It has BNC connectors on both ends and can be used as an in-line preamp for scopes, detectors, RF meters, etc., as well as counters. The preamps are powered by 3 pencils at 25 ma. Output level is 200 to 400 mv rms into 50 ohms. With probe, less batteries.

MODEL UP-3, UHF Counter Preamp, 1 MHz to 500 MHz	\$54.95
MODEL VP-2, VHF Counter Preamp, 100 KHz to 200 MHz	\$39.95

Order from PAGEL ELECTRONICS, 6742-C Tampa Ave., Reseda CA 91335. Send check or MO for ppd. shipment via UPS when avail. Or call 213-342-2714 for COD. Foreign add 10% for airmail & handling. Calif. res. add 6% sales tax. One year warranty, money back guarantee.



VHF & UHF COUNTER PREAMPS



Operation and Maintenance Information

INTRODUCTION: These are wide-band preamps for general purpose use with counters, scopes, detectors, milliwatt power meters and RF voltmeters. Gain is approximately 20 dB. This will vary somewhat depending on impedance matching, length of cable, etc. The VHF preamp has a useful range of 100 KHz to 200 MHz, and the UHF preamp covers the range 1 MHz to 500 MHz. In normal use, gain is 25 to 30 dB at mid-range decreasing to about 17 dB at upper frequency limits.

INSTALLING BATTERIES: Remove the two end screws and separate the box carefully to avoid strain on the connecting wires. Install three **metal jacketed** alkaline size AA pencils, positive terminal to the red marks. Avoid bending the tabs on the battery holder as these may short to the side of the box. When reassembling the box be careful not to swap ends or the IN and OUT labeling will be incorrect. Switch to OFF between readings to conserve batteries. Replace when voltage is below 3.8 with switch ON. Do not leave dead batteries in the unit; acid damage voids the warranty. Remove batteries before shipping the unit for repair.

OPERATION: Connect probe to input and a 3 to 4-foot cable (50 ohm) between output and counter. Hold the probe near oscillator crystal, coil, transistor, etc., wherever a reading can be obtained. If more than one oscillator is operating on the same chassis, locate the probe to minimize interference from the other oscillator. If necessary, disable the interfering oscillator with a capacitor to ground or other convenient means. For in-line use, the output cable should be very short, or use adapter UG-491 A/U. The input must be with shielded cable, open wires and clip leads will not work due to noise pickup and reactance. Self oscillations may occur if input or output cable is unterminated. Do not turn switch on until all connections are made. When working into a high impedance it may be necessary to terminate the output cable with a 50 ohm feed-thru load. If counter has two inputs, use the high Z input (with 50 ohm load) for frequencies **below 30 MHz**. This is absolutely necessary because of the wide band width, and consequent interference, on the 50 ohm input. Excess band width should be avoided when possible.

USE WITH THE MODEL 7 HERTZ METER: Connect preamp to the NORMAL input in most cases, especially for frequencies below 30 MHz. At higher frequencies, the HIGH SENS input may be used if maximum gain is required and local noise does not interfere with readings. In either case, it may be helpful to connect a 50 ohm feed-thru load to the counter input to reduce noise or prevent self oscillations, should these be a problem.

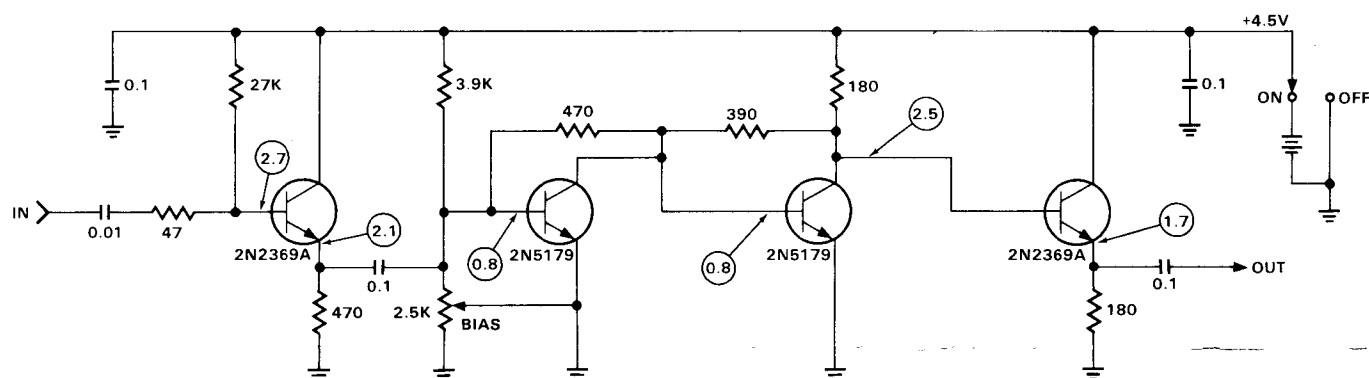
MAINTENANCE: Avoid getting the probe too close to transmitters, even with the switch off. Do not connect the preamp to antennas. Insulation on the probe tip is to prevent contact with high voltage, do not remove it. If the preamp fails to work, check batteries, battery clamps, switch, connectors, cable, etc. Use voltages noted on schematic to locate defective transistors. When replacing components, leads should be as short as original. After repairs, perform bias adjustment and check for adequate gain with calibrated signal generator.

WARRANTY: One year from date of purchase. Exclusions: acid damage, abuse or accident including overload damage, attempted repairs. For all repairs, please include \$2.00 to cover handling and return postage. Include a note with complete description of problem and possible cause. A nominal charge of \$5.00 plus \$2.00 shipping will be made for out-of-warranty repairs unless unusual damage is encountered.

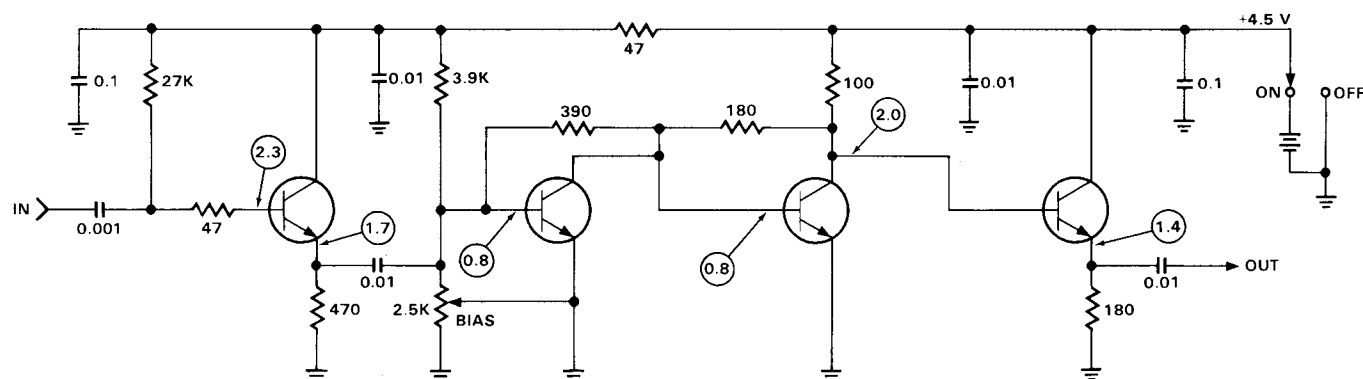
ADJUSTMENT: A bias pot is provided to optimize the gain. This has been preadjusted at the factory for alkaline batteries (4.5 volts) and will not require further adjustment unless mercury or nicad batteries are installed. Procedure: Apply a signal at 150 MHz from a signal generator with attenuator. Decrease the signal level while slowly turning the bias pot back and forth until the point of maximum sensitivity is found. Now adjust the pot a few degrees counter-clockwise of this point to allow for decreasing voltage as the batteries age. Or a variable power supply may be used and set to a voltage representing the half life of the batteries and the pot adjusted for maximum gain.

SPECIFICATIONS: Maximum input for 20 dB gain is 10 millivolts rms, with possible damage at 1 volt or more. Maximum output into 50 ohms is 200 to 400 millivolts rms. Internal noise level is approximately 200 microvolts rms (input equivalent). Dynamic range is typically 30 dB, including 10 dB of compression at saturation. Linear range is 15 to 20 dB. Input impedance is several thousand ohms at HF decreasing to several hundred ohms at VHF, and near 50 ohms at UHF. Power is 3.8 to 4.5 volts at 25 ma.

VHF COUNTER PREAMP



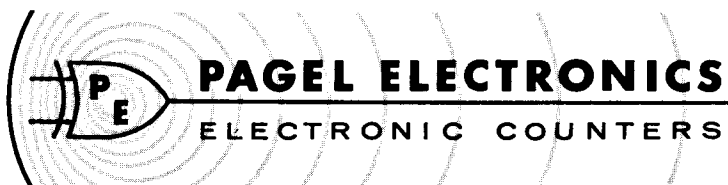
UHF COUNTER PREAMP



ALL TRANSISTORS — NE73435

NOTE: DO NOT SUBSTITUTE TRANSISTORS ON EITHER PREAMP.

2368 KC



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