AVTECH ELECTROSYSTEMS LTD.

NANOSECOND WAVEFORM ELECTRONICS
ENGINEERING . MANUFACTURING

P.O. BOX 265
OGDENSBURG
NEW YORK
13669
(315) 472-5270

BOX 5120 STN. "F"
OTTAWA, ONTARIO
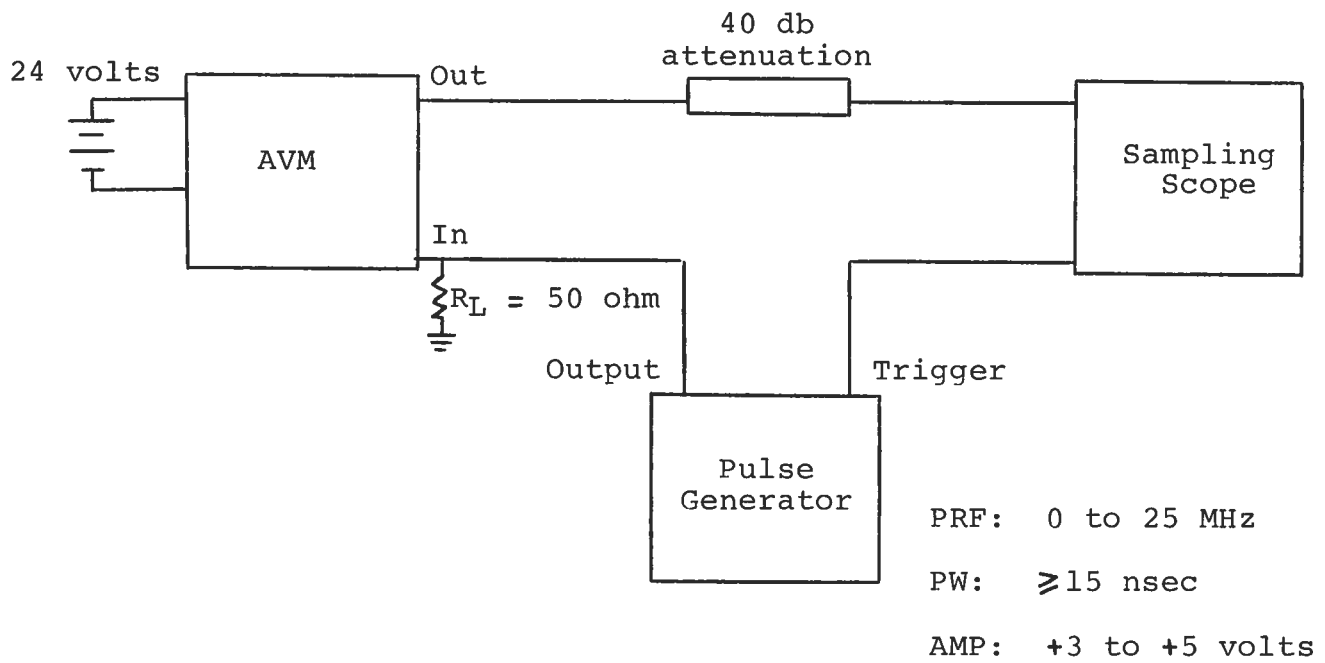CANADA K2C 3H4
(613) 226-5772
TELEX 053-4591

INSTRUCTIONS

MODEL AVM-2-EA-EW PULSE GENERATOR

S.N.:

WARRANTY

Avtech Electrosystems Ltd. warrants products of its manufacture to be free from defects in material and workmanship under conditions of normal use. If, within one year after delivery to the original owner, and after prepaid return by the original owner, this Avtech product is found to be defective, Avtech shall at its option repair or replace said defective item. This warranty does not apply to units which have been dissembled, modified or subjected to conditions exceeding the applicable specifications or ratings. This warranty is the extent of the obligation or liability assumed by Avtech with respect to this product and no other warranty or guarantee is either expressed or implied.

MODEL AVM PULSE GENERATOR TEST ARRANGEMENT

24 volts

AVM

Out

40 db
attenuation

Sampling
Scope

In

$R_L = 50$ ohm

Output

Trigger

Pulse
Generator

PRF: 0 to 25 MHz

PW: $\geqslant$ 15 nsec

AMP: +3 to +5 volts

Notes:

1)   The bandwidth capability of components and instruments
     used to display the pulse generator output signal
     (attenuators, cables, connectors, etc.) should exceed
     ten gigahertz.

2)   The use of 40 db attenuator will insure a peak input
     signal to the sampling scope of less than one volt.

3)   In general, the source pulse generator trigger delay
     control should be set in the 0.1 to 1.0 usec range.*

4)   When testing using a general purpose 50 ohm laboratory
     pulse generator as the input trigger signal source, the
     input signal should be applied via a 50 ohm feed-through
     load or alternatively, the input to the AVM unit should
     be shunted with a 50 ohm resistor.   This will prevent
     reflection (and degradation of the input pulse waveform)
     caused by the high impedance at the IN port. However,
     when triggering from a TTL source, no 50 ohm
     feed-through load or resistor is necessary but lead
     length should be as short as possible. High-speed TTL
     Schottky logic is recommended for the driving circuitry.

5)   The input trigger pulse width should be greater than 15
     nsec and less than one half of the pulse repetition
     frequency period. The unit triggers on the leading edge
     of the input trigger signal.

6)   The output pulse amplitude (0 to +15V) and pulse width
     (0 to 2 nsec) are controlled by DC voltages (0 to +10V,
     $R_{IN} \geq 10K$) applied to the AMP and PW solder terminals
     (see Fig. 1).

7)   The output amplitude pulse width and PRF are
     inter-related. It is recommended that the following
     sequence be used:

     a) Set PRF
     b) Set output amplitude
     c) Set pulse width

8)   WARNING: Model AVM-2 may fail if triggered at a PRF
     greater than 25.0 MHz.

9)   The Model AVM-2 pulse generator can withstand an
     infinite VSWR on the output port.

10) The AVM unit requires a maximum prime input power of
     about 12 watts. It is therefore strongly recommended
     that the unit be heatsunk in order to maintain a
     moderate chassis temperature.

11)   To DC offset the output pulse connect a DC power supply
      set to the required DC offset value to the terminals
      marked O.S.   The maximum attainable DC offset voltage is
      50 volts.

*   The stability of the display on some sampling scopes is
      very sensitive to this delay, particularly at high PRF
      (eg. 10 to 25 MHz).   If necessary, consult your sample
      scope instructions manual for the proper triggering
      method.

09.04.84