



AVTECH ELECTROSYSTEMS LTD.

NANOSECOND WAVEFORM ELECTRONICS
SINCE 1975

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INSTRUCTIONS

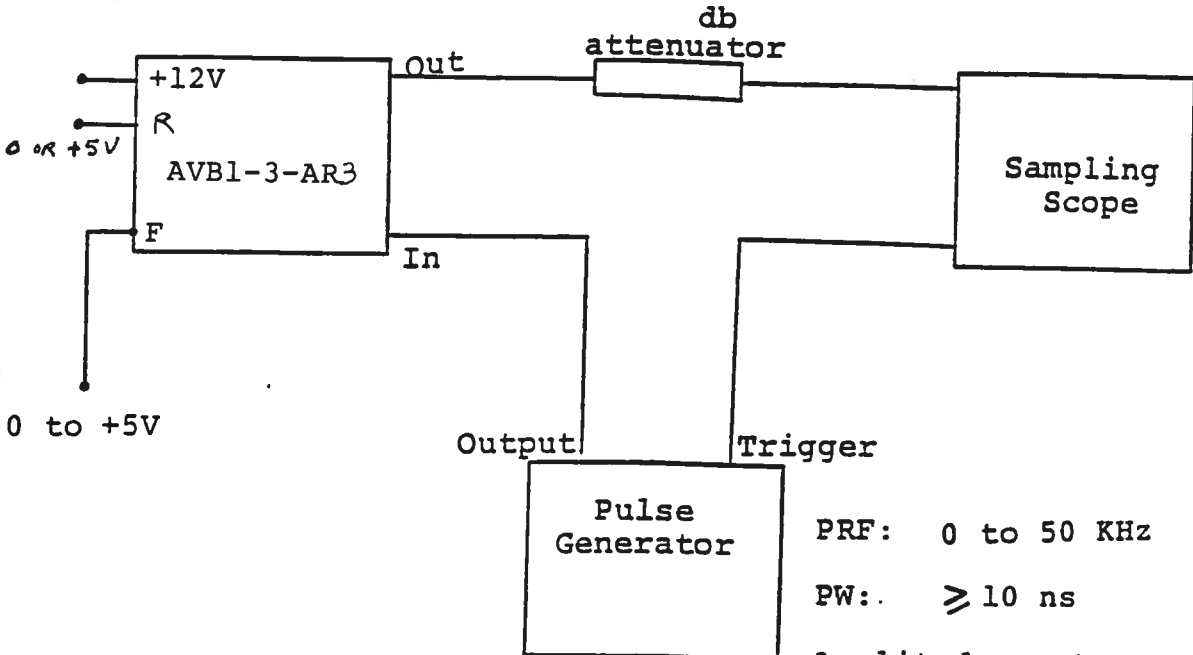
MODEL AVB1-3-AR3 MONOCYCLE GENERATOR

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 disassembled, 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.

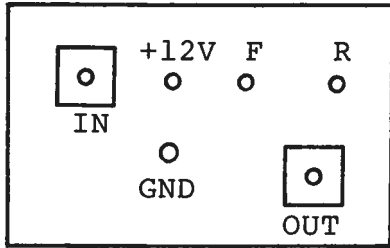
MONOCYCLE GENERATOR TEST ARRANGEMENT



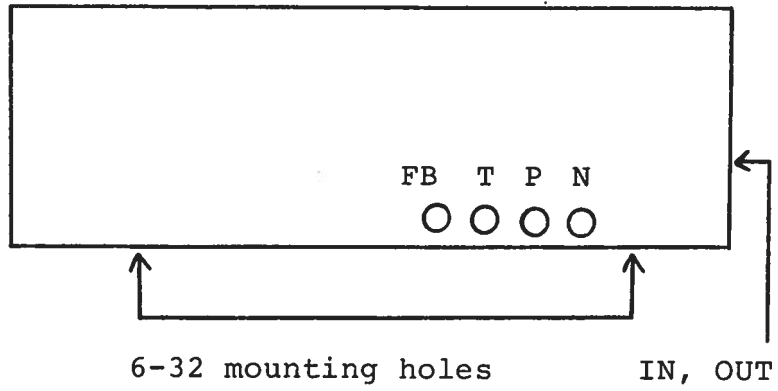
PRF: 0 to 50 KHz
PW: \geq 10 ns
Amplitude: +4 to +30 volts
Note that input contains series 250 volt DC blocking capacitor

Notes:

- 1) The bandwidth capability of components and instruments used to display the monocycle generator output signal (attenuators, cables, connectors, etc.) should exceed 10 GHz.
- 2) The use of a 40 dB attenuator will insure a peak input signal to the sampling scope of less than one Volt.
- 3) In general, the pulse generator delay control should be set in the 100 ns range. Other settings should be as shown in the above diagram. The monocycle generator output is delayed with respect to the trigger input signal by about 30 ns (typically).
- 4) The monocycle generator can withstand an infinite VSWR on the output port.
- 5) With 0 V applied to the "R" terminals, the output frequency is approx. 1000 MHz when 0 V is applied to the F solder terminal and 500 MHz when +5V is applied to the F solder terminal ($R_{IN} \geq 10K$). Note that the frequency may be continuously varied from 500 to 1000 MHz by varying the voltage from 5 to 0 Volts.
- 6) With +5V applied to the "R" terminals, the output frequency is approx. 2000 MHz when 0 V is applied to the F solder terminal and 1000 MHz when +5V is applied to the F solder terminal ($R_{IN} \geq 10K$). Note that the frequency may be continuously varied from 1000 to 2000 MHz by varying the voltage from 5 to 0 Volts.
- 7) The ten turn P and N pots (which are accessible on the side of the chassis), are for minor adjustments to the widths of the positive and negative voltage swings (in the 500-1000 MHz range). Clockwise rotation of the pots increases the widths. The T pot is for minor adjustment to the separation of the positive and negative swings (when in 500 MHz mode only). Clockwise rotation of the pot increases the separation. At time of shipping the pots were adjusted for 500 and 1000 MHz operation.
- 8) The ten turn FB pot is for minor adjustments to the width of the output pulse in the 1000-2000 MHz range.
- 9) Two tapped 6-32 holes are provided on the bottom surface of the chassis for mounting purposes. The mounting screws should not penetrate the chassis by more than 0.5".



END VIEW



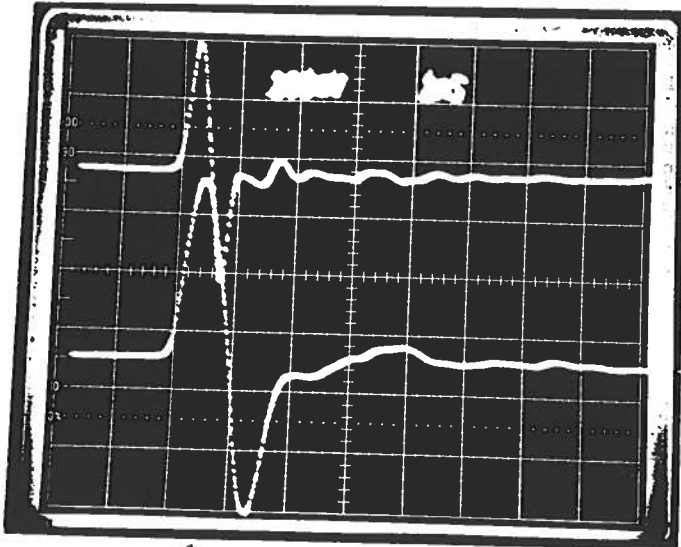
SIDE VIEW

PERFORMANCE CHECK

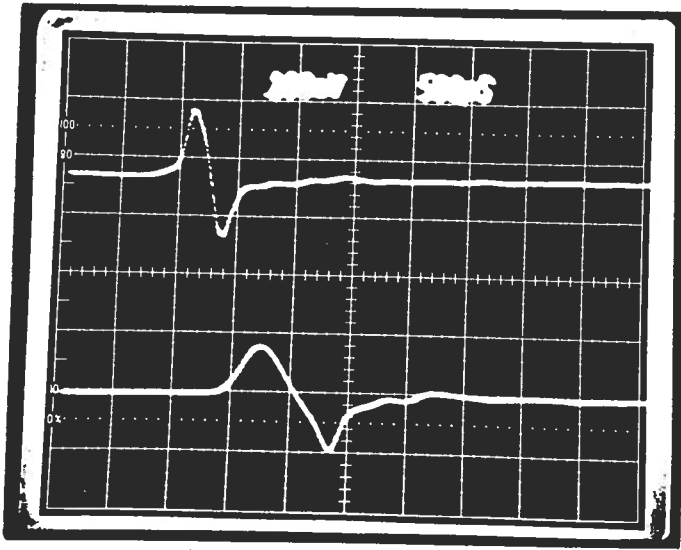
Model: AVB1-3-AR3

S.N.: 7861

Date: JAN 27 1997



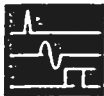
① 40 db ATTEN. ∴ 10V/DIV
 TOP $V_R = 0, V_F = 0$ $\text{MRF} = 30 \text{ kHz}$
 BOT $V_R = 0, V_F = +5V$



② 40 db ATTEN. ∴ 10V/DIV
 TOP $V_R = +5V, V_F = 0$
 BOT $V_R = +5V, V_F = +5V$

- a) Output signal amplitude, V_{pp} :
 $500 - 1000 \text{ MHz} : \geq 50 \text{ V}_{pp}$
- b) Spurious signals WRT peak:
 $1000 - 2000 \text{ MHz} : \geq 15 \text{ dB}$
 $\leq 26 \text{ dB}$
- c) Waveforms: $500, 1000 + 2000 \text{ MHz}$
- d) Prime power: $+12 \text{ VDC}$
 275 mA (MAX)
- e) Tuning range:
 $500 \text{ TO } 2000 \text{ MHz}$
- f) Symmetry: OK
- g) Stability: OK
- h) PRF: $0 \text{ TO } 50 \text{ kHz}$

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Fax Ref No: 961 From: Avtech Electrosystems Ltd.

To: Applied Research Our Fax No: (613) 226-2802

Tel: 802-763-8348 Date: November 4, 1996

Attn: Rex Morey Receivers Fax No: 802-763-8283

Subject: 500-2000 MHz
Monocycle Generator No. of pages: 2

As per our telephone conversation of November 1st, I am pleased to provide a price and delivery quotation for a special purpose monocycle generator meeting the following specifications:

Model designation: AVB1-3-AR3.

Output frequency: Range A: 500-1000 MHz.
Range B: 1000 MHz to 2000 MHz.
Output frequency controlled by potential (0 to +5 Volts) applied to solder terminal ($R_{IN} \approx 2.2K$).
Range selected by application of +5 VDC to a solder terminal.

Output amplitude: Range A: ≥ 50 Volts peak to peak.
(to 50 Ohms) Range B: ≥ 15 Volts peak to peak.

PRF: Range A: 0 to 50 kHz.
Range B: 0 to 1 MHz.
Equals input trigger PRF.

Spurious: Range A: ≤ 26 dB.
Range B: This range exhibits the periodic reflections following the main output by 21 ns (as per the 2500 MHz unit).

Trigger: +4 to +30 Volts
PW \geq 10 ns.

Propagation delay: \approx 40 ns.

Output spurious level: \leq 26 dB.

Temperature range: 0°C to 40°C.

Prime power: +12 VDC, 250 mA max.

Package size: 1.5" x 3.0" x 11".
Extruded aluminum.

Weight: 2.2 lbs. (est).

Connectors:
Input, output: SMA.
Power and control: Solder terminals.

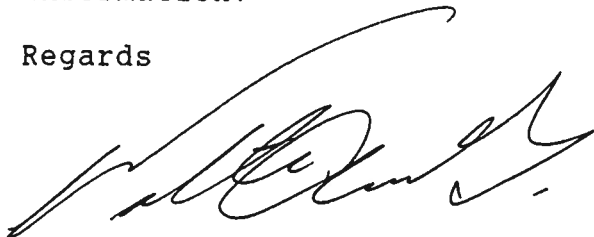
Other: See Model AVB1-3, page 92,
Cat. No. 9.

Price: \$2,898.00 US, FOB destination.

Delivery: 60 days ARO.

Thank you for your continuing interest in our products. Please call me again (1-800-265-6681) if you require any additional information.

Regards



Dr. Walter Chudobiak
Chief Engineer

WC:pr