



**AVTECH ELECTROSYSTEMS LTD.**

NANOSECOND WAVEFORM ELECTRONICS  
SINCE 1975

P.O. BOX 265  
OGDENSBURG, NY  
U.S.A. 13669-0265  
TEL: (315) 472-5270  
FAX: (613) 226-2802

TEL: 1-800-265-6681  
FAX: 1-800-561-1970  
U.S.A. & CANADA

BOX 5120 STN. F  
OTTAWA, ONTARIO  
CANADA K2C 3H4  
TEL: (613) 226-5772  
FAX: (613) 226-2802

**INSTRUCTIONS**

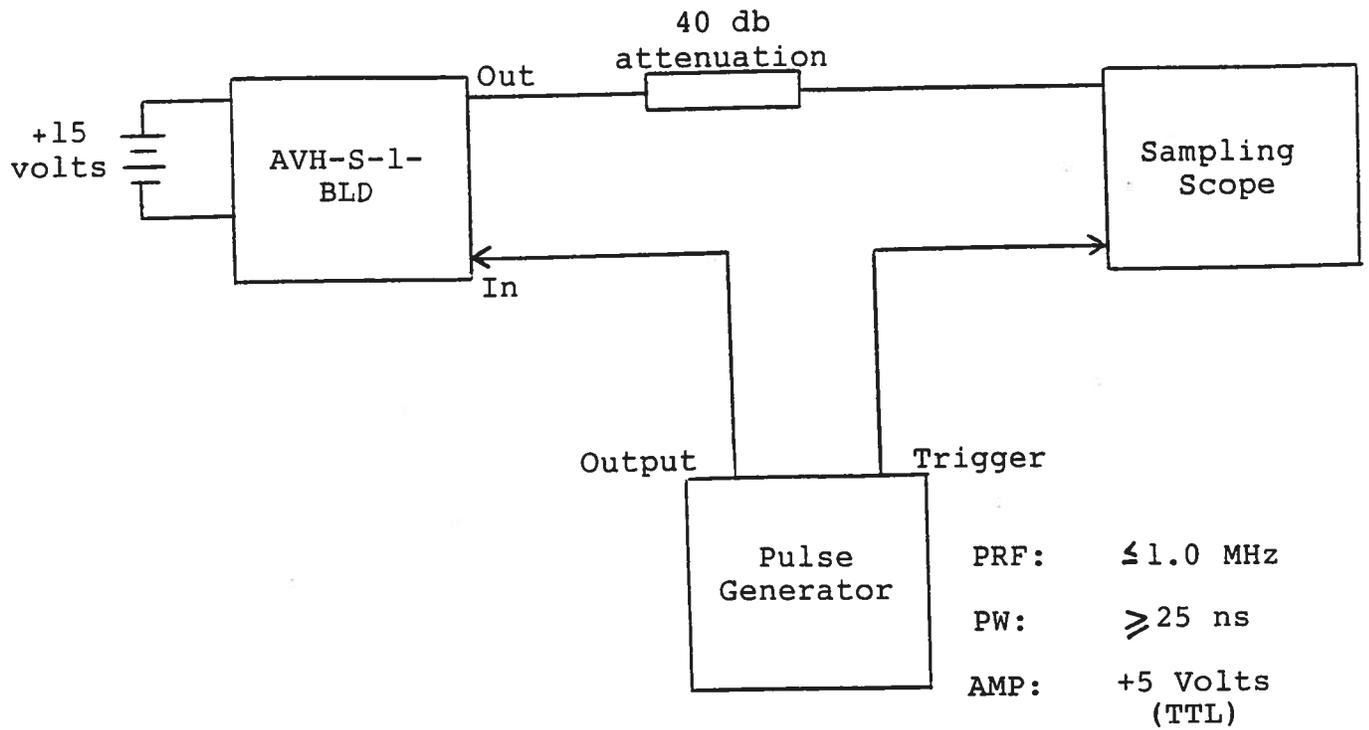
**MODEL AVH-S-1-BLD IMPULSE GENERATOR**

**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.

IMPULSE GENERATOR TEST ARRANGEMENT



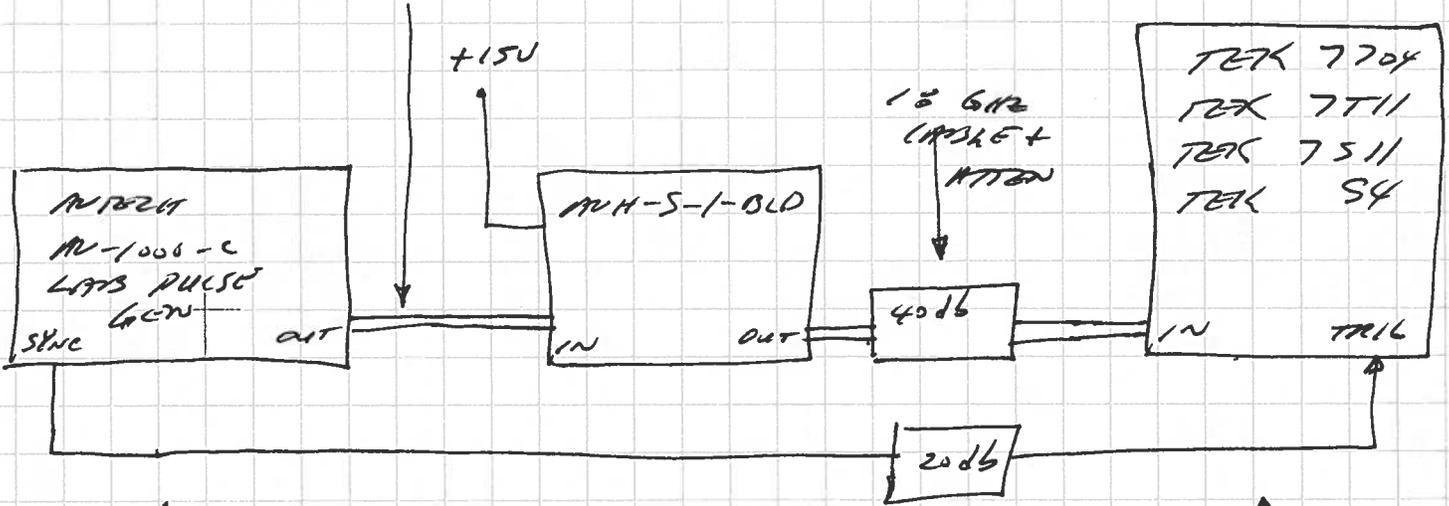
Notes:

- 1) The bandwidth capability of components and instruments used to display the impulse generator output signal (attenuators, cables, connectors, etc.) should exceed ten gigahertz.
- 2) The use of 40 db attenuation will insure a peak input signal to the sampling scope of less than one volt.
- 3) In general, the pulse generator trigger delay control should be set in the 100 ns range. Other settings should be as shown in the above diagram. The impulse generator output is delayed with respect to the trigger input signal by about 40 ns (typically).
- 4) The impulse generator can withstand an infinite VSWR on the output port.
- 5) A pulse width adjust ten turn trim pot is provided on the end of the chassis (adjacent to the OUT SMA side). Clockwise rotation of the trim pot reduces the pulse width (and amplitude eventually).
- 6) An amplitude adjust ten turn trim pot is provided on the end of the chassis (adjacent to the IN SMA side). Clockwise rotation of the trim pot reduces the amplitude (and spurious level).
- 7) The details of the scope settings used to obtain the output waveform are shown on the following pages.
- 8) Four 2-56 tapped mounting holes are provided on the bottom of the chassis. Note that the 2-56 screws should not penetrate more than 1.0 cm into the chassis.
- 9) For additional assistance:

Call: (613) 226-5772  
Fax: (613) 226-2802

MODEL MVH-5-1-BLD WAVEFORM CHECK      CH221L

50 OHM CABLE  
4 FEET



BPF: 300 KHz TO 1.0 MHz.  
 FWH: 100 NS  
 AMP: +3V

TEK SETTINGS  
 AS PER  
 ATTACHED  
 PHOTO COPY.

Operating Instructions-7T11

method of adjusting the Sweep Cal is discussed in the First Time Operation Procedure later in this section. This adjustment must be reset each time the 7T11 is transferred between oscilloscopes, and when a considerable change in ambient temperature occurs.

TIME/DIV Readout

The 7T11 TIME/DIV setting selected is displayed near the top of the CRT except when the 7T11 is used in a oscilloscope without readout circuitry. The horizontal position of the readout on the CRT corresponds to the horizontal position of the oscilloscope compartment in use.

The TIME/DIV selected at the 7T11 front panel is displayed on the CRT using the digits 1, 2, or 5 followed by one or two zeros if required. The TIME/DIV readout does not use decimal points. The displayed digits are for the units-of-measure readout. With the 7T11 the measure displayed will be ms/div,  $\mu$ s/div, ns/div or the VARIABLE (CAL IN) switch is in the out position symbol used to indicate less than (<), is displayed preceding the TIME/DIV readout as a warning that it is uncalibrated. The intensity of the readout is entirely adjustable by a front panel control on the scope, which also permits the readout to be switch

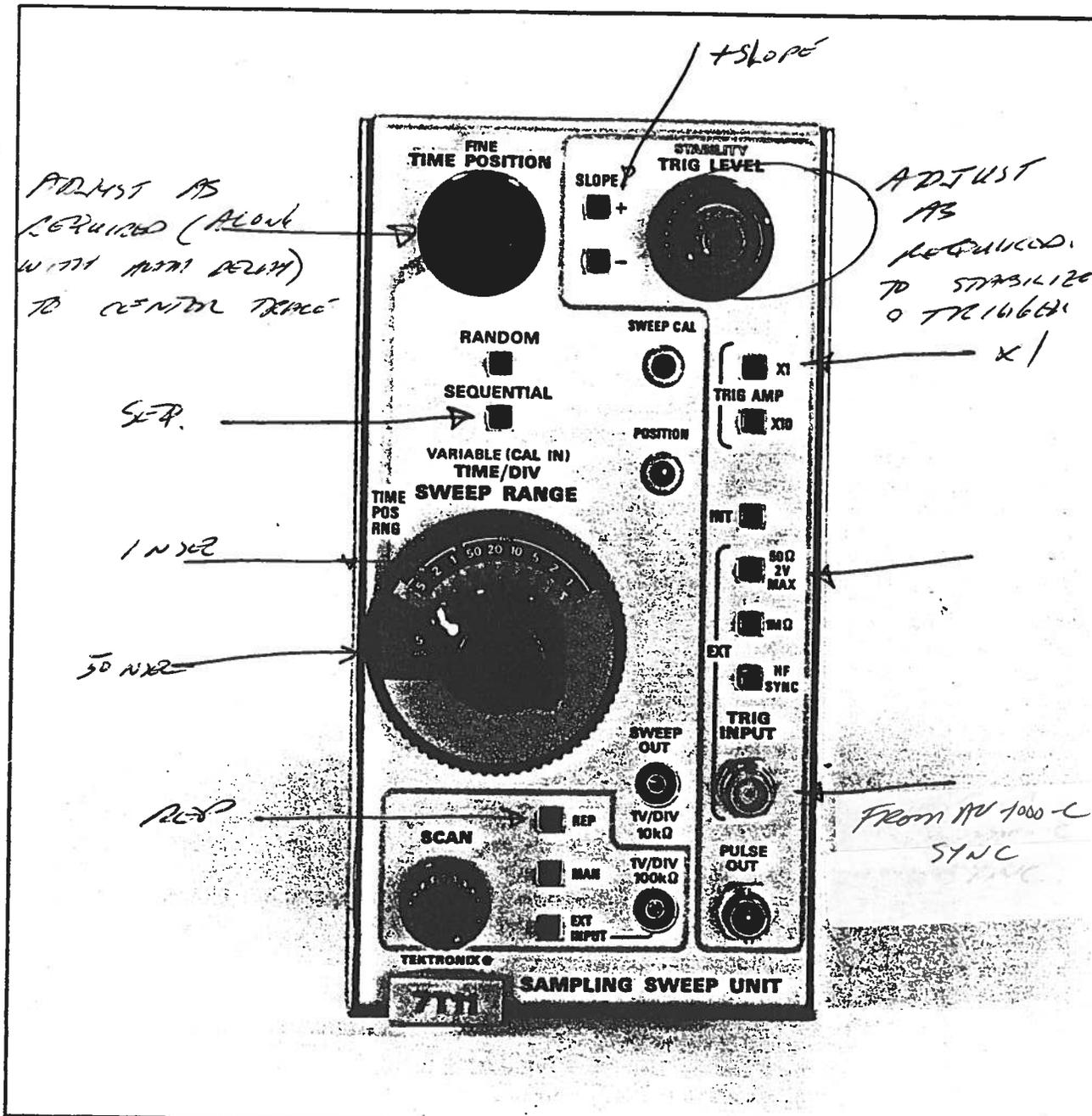


Fig. 2-2. 7T11 front panel.

-8  
-9  
-10  
-11  
-11  
-11  
-12  
-12  
-12  
-14

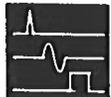
*100 mV/div*

*S-4*  
*WITH*  
*40 db*  
*ATTENUATION*



*NOT MARK*

Fig. 1-1. 7S11 Sampling Unit.



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 FAX: (613) 226-2802

Fax Ref No:	<u>6168</u>	From:	<u>Avtech Electrosystems Ltd.</u>
To:	<u>Battelle Northwest</u>	Our Fax No:	<u>613-226-2802</u>
		Date:	<u>May 10, 1993</u>
Attn:	<u>Parks Gribble</u> <u>Tel: 509-375-2238</u>	Receivers Fax No:	<u>509-375-3621</u>
Subject:		No. pages Faxed:	<u>4</u>

We are pleased to quote as follows:

A) Model designation: AVH-S-1-P-BLD. This is a lightweight version of Model AVH-S-1-P-BLC.

Output amplitude:  $\geq +12$  Volts (fixed).  
(to 50 Ohms)

Pulse width:  $\leq 100$  ps (FWHM).

PRF: 0 to 1.0 MHz (equals input trigger PRF).

Baseline offset: 0 Volts (fixed).

Baseline perturbations:  $\leq 26$  db below peak for 500 ps  $\leq$  to  $\leq 6$  ns.

Input trigger: +5V, PW  $> 25$  ns.

Propagation delay:  $\leq 50$  ns.

Prime power: +15 Volts, 150 mA max.

Package size: 1.1 x 2.0 x 3.0".

Package weight:  $\approx 1/3$  of AVH-S-1-P-BLC (estimated).

Package material: Extruded aluminum, natural finish.

Input connectors:	a) Prime power: (+15V) b) Trigger input:	Solder pin feed through capacitor with ground. Female SMA on same chassis side as prime power connector.
Output connectors:	SMA female located on same chassis side as input connector (see sketch).	
Price:	\$1,740.00 US each, FOB destination (for a quantity of one).	
Delivery:	30 days ARO.	
B) Model designation:	AVH-S-1-P-BLE. This is a lightweight, high amplitude version of Model AVH-S-1-P-BLA.	
Output amplitude: (to 50 Ohms)	$\geq +15$ Volts (fixed).	
Pulse width:	$\leq 100$ ps (FWHM).	
PRF:	0 to 1.0 MHz (equals input trigger PRF).	
Baseline offset:	0 Volts (fixed).	
Baseline perturbations:	$\leq 20$ db below peak for 500 ps $\leq$ to $\leq 6$ ns.	
Input trigger:	+5V, PW $> 25$ ns.	
Propagation delay:	$\leq 50$ ns.	
Prime power:	+15 Volts, 150 mA max.	
Package size:	1.1 x 2.0 x 3.0".	
Package weight:	$\approx 1/3$ of AVH-S-1-P-BLA (estimated).	
Package material:	Extruded aluminum, natural finish.	
Input connectors:	a) Prime power: (+15V) b) Trigger input:	Solder pin feed through capacitor with ground. Female SMA on same chassis side as prime power connector.

Output connectors: SMA female located on same chassis side as input connector (see sketch).  
Price: \$1,990.00 US each, FOB destination (for a quantity of one).  
Delivery: 30 days ARO.

Note that when testing the jitter performance of such units, we use a TEK S4/7T11/7S11 system triggered by an AVTECH AV-1000-C (or DATA PULSE 110B). The trigger pulse duty cycle is kept low ( $PW \leq 100$  ns). We find that most general purpose lab power supplies are adequate but we do check to insure that they do not output excessively high ripple.

Thank you for your continuing interest in our products. Please contact me again if you require any additional information or modifications to the above quotation.

Rgds



Dr. Walter Chudobiak  
Chief Engineer

WC:pr

Aug 20/93