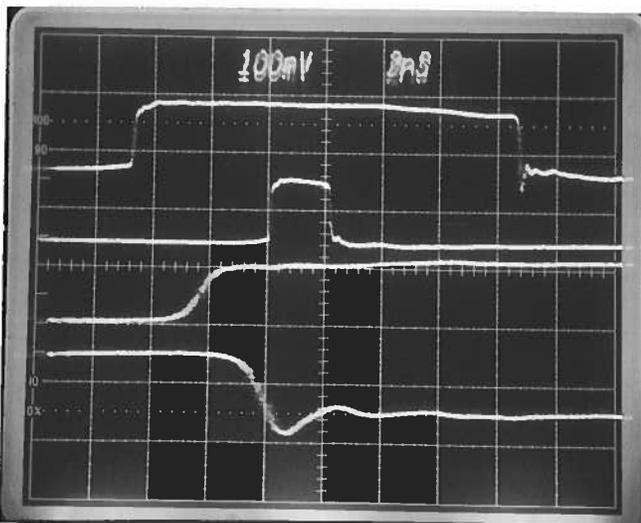


PULSE GENERATOR  
PERFORMANCE CHECK

Model: *AVMP-2C-PEPIA*

S.N.: *9320*

Date: *JUNE 28 2000*



- a) Output signal amplitude: *0 to +10 V (to 50Ω)*
- b) Pulse width: *5 to 100 ns*
- c) Rise time: *≤ 100 ps*
- d) Fall time: *≤ 135 ps*
- e) PRF: *0 to 100 kHz*
- f) Jitter, stability: *OK*
- g) Prime power: *120/240 V*  
*50-60*

*40 dB ATTEN*  
*-- 10 V/DIV*

*TOP 5 ns/DIV) BOTH*

*MID 200ps/DIV (RISE TIME)*

*BOT 200ps/DIV (FALL TIME)*  
*PRF ≈ 100 kHz*

*[Signature]*



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**AVMP-2-C-P-EPIA CALIBRATION REPORT**

Model: AVMP-2-C-P-EPIA

Serial Number: 9320

Client's Inventory Number: 19249

Date: July 13, 2001

Personnel: Dr. Michael J. Chudobiak

File Name: R:\mjc\nist-cal\AVMP-2-C-P-EPIA,sn9320.doc

Procedure name: AVMP-2-C-P-EPIA calibration, version 1.  
 The calibration standards used are NIST-traceable.  
 Environmental conditions: 24 ± 2 °C, 45 ± 10% RH.

**REPETITION RATE CALIBRATION**

The repetition rate is measured with the INT/EXT switch set to "INT". The frequency of TRIGGER TTL output is then measured and recorded below using a Fluke PM6681 Counter, referenced to Datum ExacTime 9390-6000 GPS Frequency Reference.

PRF RANGE Setting	PRF FINE Setting	Nominal	As Received	After Adjustment	Notes
1 kHz	1	< 100 Hz	87.2 Hz	N/A	OK
1 kHz	10	> 1 kHz	1.02 kHz	N/A	
10 kHz	1	< 1 kHz	0.982 kHz	N/A	OK
10 kHz	10	> 10 kHz	11.21 kHz	N/A	
100 kHz	1	< 10 kHz	10.51 kHz	9.59 kHz	Added 1000 pF to range switch, to correct original calibration error.
100 kHz	10	> 100 kHz	124.0 kHz	113.6 kHz	
1 MHz	1	< 100 kHz	91.4 kHz	97.2 kHz	Reduced 330 pF to 220 pF on range switch, to correct original calibration error.
1 MHz	10	> 1 MHz	960 kHz	1.021 MHz	

**DELAY CALIBRATION**

The delay between the leading edge of the main output and the leading edge of the TRIGGER TTL output is measured and recorded below using a Fluke PM6681 Counter, referenced to Datum ExacTime 9390-6000 GPS Frequency Reference. The amplitude is set to maximum, and the repetition rate is set to the maximum frequency in the 100 kHz range.

DELAY RANGE Setting	DELAY FINE Setting	Nominal	As Received	After Adjustment	Notes
1	1	N/A	9.4 ns	N/A	OK
10	10	>200 ns larger than with RANGE/FINE set at 1/1.	460 ns	N/A	OK

### PULSE WIDTH CALIBRATION

The output pulse width is measured using 7704A oscilloscope mainframe, with 7S11 (with S4 sampling head) and 7T11 sampling plug-ins, and a 40 dB attenuator. The amplitude is set to maximum, and the repetition rate is set to the maximum frequency in the 100 kHz range. The delay coarse and fine controls are set to minimum.

PULSE WIDTH Setting	Nominal	As Received	After Adjustment	Notes
1	< 5ns	0 ns	N/A	OK
10	> 100 ns	123 ns	N/A	OK

### AMPLITUDE CALIBRATION

The amplitude is measured using 7704A oscilloscope mainframe, with 7S11 (with S4 sampling head) and 7T11 sampling plug-ins, and a 40 dB attenuator. The repetition rate is set to the maximum frequency in the 100 kHz range. The delay coarse and fine controls are set as required to display the waveform on the oscilloscope. The pulse width is set to maximum.

AMPLITUDE Setting	Nominal	As Received	After Adjustment	Notes
10	> 10 Volts	10.4 V	N/A	OK

### RISE TIME CALIBRATION

The 20%-80% rise time is measured using 7704A oscilloscope mainframe, with 7S11 (with S4 sampling head) and 7T11 sampling plug-ins, and a 40 dB attenuator. The amplitude is set to maximum, and the repetition rate is set to the maximum frequency in the 100 kHz range. The delay coarse and fine controls are set to minimum. The pulse width is set to 10 ns.

Nominal	As Received	After Adjustment	Notes
≤ 100 ps	< 100 ps	N/A	OK

### FALL TIME CALIBRATION

The 80%-20% fall time is measured using 7704A oscilloscope mainframe, with 7S11 (with S4 sampling head) and 7T11 sampling plug-ins, and a 40 dB attenuator. The amplitude is set to maximum, and the repetition rate is set to the maximum frequency in the 100 kHz range. The delay coarse and fine controls are set to minimum. The pulse width is set to mid-range.

Nominal	As Received	After Adjustment	Notes
≤ 135 ps	< 100 ps	N/A	OK

### GENERAL OPERATION CHECKS

- External Trigger function is operative.
- Power switch pilot lamp is operative.

### EQUIPMENT USED

- Tektronix 7704A Oscilloscope mainframe (S/N B205696) with Tektronix 7S11 sampling unit (S/N B102197), with S4 sampling head (S/N B072407), and Tektronix 7T11 sweep unit (S/N B223072).
- Fluke PM6681/016 Counter (S/N 765782)
- Datum ExacTime 9390-6000 (S/N 4461)