



# REVISIONS

LTR	ECO	DESCRIPTION	DATE	APPROVED

8411200411 841105  
PDR ADOCK 05000280  
F PDR

SIGNATURE		DATE	TITLE	
PROD TEST	<i>J King</i>	12-11-80	AB295-Q2 Analog Board Assembly Acceptance Test Procedure	
ENGINEERING	<i>R C B G R</i>	12/9/80		
QUAL CONTROL	<i>PP Hunt</i>	12-10-80	NUMBER ATP445	REV
			SHEET 1 OF 7	



## 1.0 SCOPE

This document defines the Acceptance Test Procedure (ATP) for the AB295-Q2 Analog Board assembly. This assembly includes 8 sub-assembly boards, VEC part number 9860-XX (the low pass frequency, -XX Hz. is to be in accordance with the Sales Order). The 9860-XX assemblies are to have been previously tested and accepted as ready for shipment. Any burn-in tests to be specified will be accomplished after completion of this ATP. Either the end item ATP or a special test procedure appropriate to a particular contract will define any additional test requirements.

## 2.0 EQUIPMENT REQUIRED

Table 1 lists the test equipment required to perform the ATP.

Table 1 - Equipment Required for ATP

<u>Decription</u>	<u>Manufacturer</u>	<u>Part No. or Model</u>	<u>Alternate</u>
AB295 Tester	Validyne	T-1087	None
Power Supply ( $\pm 15$ VDC/0.15A)	Lambda	LPD-422FM	Commerical Equivalent
Digital Multimeter	Data Precision	DP245, DP248	Commerical Equivalent

## 3.0 PRELIMINARY PROCEDURE

- 3.1 Inspect the AB295-Q2 assembly for accuracy and completeness of assembly. Log the Low Pass Filter (Ass'y. 9860) serial numbers and positions in which they are installed on the data sheet. Verify retaining screws securely fasten each 9860 assembly in place on the AB295-Q2.

## 4.0 INITIAL TEST SET-UP

- 4.1 With the  $\pm 15$ VDC power supply "OFF", connect the AB295-Q2 (UUT) to the AB295-Q2 tester.

CAUTION: Always use caution to observe proper polarity of the mating connector and to turn off the power supply before connecting or disconnecting the UUT to the tester.

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## 5.0 FUNCTIONAL TESTS

Perform all tests and follow the sequence described. Apply  $\pm 15$  VDC  $\pm 3\%$  power, with current limits of 150 to 300 mA.

5.1.1 On the AB295-Q2 tester press the RESET switch to obtain CHANNEL ADDRESS indication for CHAN 1. Place S3 in the #1 position. Monitor the current test points "+15V CURRENT" on the tester panel using the 100 mA DC current range of the digital multimeter. The indicated current shall not exceed 130 mA DC.

5.1.2 Monitor the current test points "-15V CURRENT" on the tester front panel using the 100 mA DC current range of the digital multimeter. The indicated current shall not exceed 110 mA DC.

## 5.2 Reference Voltage Adjustments

5.2.1 Monitor DC volts at TP1 with respect to TP3 (ground) of the UUT. Adjust R2 (+9V ADJ) on UUT (the second potentiometer away from the card edge connector) to obtain  $+9.000 \pm 0.005$  VDC.

5.2.2 Monitor DC volts at TP2 with respect to TP3 (ground) of the UUT. Adjust R8 (-9V ADJ) on UUT (the first potentiometer, closest to the card edge connector) to obtain  $-9.000 \pm 0.005$  VDC.

## 5.3 $\pm 7$ V Reference

5.3.1 Measure DC volts at AB295-Q2 tester "+15V CURRENT" - (minus) test point with respect to ground. \_\_\_\_\_ ( $E_A$ )

5.3.2 Measure DC volts at tester "+7.5V" test point. \_\_\_\_\_ ( $E_B$ )

5.3.3 The voltage measured in 5.3.2 shall be ( $E_B$ ) =  $\frac{E_A}{2} \pm 0.025$  VDC.

5.3.4 Measure the DC volts at AB295-Q2 tester "-15V CURRENT" + (plus) test point with respect to ground. \_\_\_\_\_ ( $E_C$ )

5.3.5 Measure DC volts at tester "-7.5V" test point. \_\_\_\_\_ ( $E_D$ )

5.3.6 The voltage measured in 5.3.5 shall be ( $E_D$ ) =  $\frac{E_C}{2} \pm 0.025$  VDC.

## 5.4 +12 VDC Check

Measure DC volts at UUT TP10 with respect to TP3 (ground). The voltage shall be  $+12.0 \pm 0.6$  VDC.

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## 5.5 Analog Multiplexer Tests

- 5.5.1 Monitor the DC voltage difference between the "INPUT" and "OUTPUT" test points of the AB295-Q2 tester. (S3 in position 1 gives +10V at all even input channels and -10V at all odd input channels.)

Press "RESET" to monitor the channel 1 input to output voltage differential. Press the "STEP" switch once to increment the measurement to channel 2, etc., until all 32 channels have been measured.

At each position of the 32-channel multiplexer, the input to output differential voltage shall be  $0.000 \pm 0.020$  VDC. Also note that the "INPUT FAULT" indicator remains unlit (at front panel of tester).

- 5.5.2 Repeat the tests described in 5.5.1, except place S3 in position 2 (which gives +10V at all odd input channels and -10V at all even input channels).

At each position of the 32-channel multiplexer, the input to output differential voltage shall be  $0.000 \pm 0.020$  VDC. Also note that the "INPUT FAULT" indicator remains unlit (at the front panel of tester).

- 5.5.3 After completion of above tests, remove power and disconnect UUT from tester. Complete data entries in TEST REPORT forms and indicate acceptance or note deficiencies.

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# TEST REPORT

ASSY AB295-Q2  
ANALOG BOARD ASSEMBLY

S/O \_\_\_\_\_

CUSTOMER \_\_\_\_\_

W/O \_\_\_\_\_

SERIAL NO. \_\_\_\_\_

## Paragraph/Step

## Accepted

## Specification

### 3.1 Visual Inspection

POSITION	9860 S/N	POS	9860 S/N
Ch 1-4	_____	17-20	_____
Ch 5-8	_____	21-24	_____
Ch 9-12	_____	25-28	_____
Ch 13-16	_____	29-32	_____

Ass'y accurate  
and complete.  
Screws tight.

### 5.1.1 +15V CURRENT

\_\_\_\_\_

130 mA DC Max.

### 5.1.2 -15V CURRENT

\_\_\_\_\_

110 mA DC Max.

### 5.2.1 +9V ADJUST

\_\_\_\_\_

+9.000  
±.005 VDC

### 5.2.2 -9V ADJUST

\_\_\_\_\_

-9.000  
±.005 VDC

### 5.3.1 $E_A =$ \_\_\_\_\_ VDC

### 5.3.2 $E_B =$ \_\_\_\_\_ VDC

### 5.3.3 $\frac{E_A}{2} =$ \_\_\_\_\_ VDC

$E_B = \frac{E_A}{2} \pm 0.025$   
VDC

### 5.3.4 $E_C =$ \_\_\_\_\_ VDC

### 5.3.5 $E_D =$ \_\_\_\_\_ VDC

### 5.3.6 $\frac{E_C}{2} =$ \_\_\_\_\_ VDC

$E_D = \frac{E_C}{2} \pm 0.025$   
VDC

### 5.4 +12 VDC check

\_\_\_\_\_

+12.0 ±0.6 VDC

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**Validyne**  
ENGINEERING CORPORATION

# TEST REPORT

ASSY AB295-Q2  
ANALOG BOARD ASSEMBLY

S/O \_\_\_\_\_

CUSTOMER \_\_\_\_\_

W/O \_\_\_\_\_

SERIAL NO. \_\_\_\_\_

## Paragraph/Step

## Accepted

## Specification

5.5.2 Multiplexer Differential  
Voltage (-10V @ EVEN, +10V @ ODD)

### INPUT FAULT INDICATOR

Ch1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

Unlit

0.00  $\pm$ 0.02 VDC

0.00  $\pm$ 0.02 VDC

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