

Calibration Certificate



Certificate Number: 2023000012

Customer:

COGWELL, INC
1700 Wyatt Dr
Ste 1
Santa Clara CA 95054
United States

Calibration Lab:

COGWELL, INC
1700 Wyatt Dr
Ste 1
Santa Clara CA 95054
United States

Job Number		ID	CX000515
Number		Description	Tektronix DPO3034 Oscilloscope
Technician	Tong La	Manufacturer	Tektronix
Temperature	22.18	Model Number	dpo3034
Humidity	34.21	Serial Number	c011733
WO Results	Pass	Service Date:	2/16/2023
Received	In Tolerance	Due Date:	2/16/2024

COGWELL, INC certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the SI through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2005.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

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Work Order Notes:

REVIEWED by:



Standards Used

Description	Service Date	Due Date	ID
Fluke 9500B/3200 Calibrator	2/13/2023	2/3/2024	PRE0000028
Fluke 9530 Head	2/13/2023	10/28/2023	PRE0000029

Tek DPO3034: (1 yr) VER VISA /9500+

MET/CAL Results	Pass	In Tolerance		DELL-T3600		
Test Description	True Value	Lower Limit	Test Results	Upper Limit	Status	TSR

DUT IDENTIFICATION

Serial Number: C011733
 Firmware Level: CF:91.1CT FV:v2.40

SIGNAL PATH COMPENSATION

Pass

SELF TEST

Pass

INPUT IMPEDANCE

Channel 1

10 mV/div						
1.00 MOhm	1.00 MOhm	0.990 MOhm	1.001 MOhm	1.010 MOhm	Pass	9.99
100 mV/div						
1.00 MOhm	1.00 MOhm	0.990 MOhm	1.004 MOhm	1.010 MOhm	Pass	9.96
75.00 Ohm	75.00 Ohm	74.250 Ohm	74.947 Ohm	75.750 Ohm	Pass	10.01
50.0 Ohm	50.0 Ohm	49.50 Ohm	50.06 Ohm	50.50 Ohm	Pass	9.99

Channel 2

10 mV/div						
1.00 MOhm	1.00 MOhm	0.990 MOhm	1.000 MOhm	1.010 MOhm	Pass	10.00
100 mV/div						
1.00 MOhm	1.00 MOhm	0.990 MOhm	1.005 MOhm	1.010 MOhm	Pass	9.95
75.00 Ohm	75.00 Ohm	74.250 Ohm	75.106 Ohm	75.750 Ohm	Pass	9.99
50.0 Ohm	50.0 Ohm	49.50 Ohm	50.12 Ohm	50.50 Ohm	Pass	9.98

Channel 3

10 mV/div						
1.00 MOhm	1.00 MOhm	0.990 MOhm	0.999 MOhm	1.010 MOhm	Pass	10.01
100 mV/div						
1.00 MOhm	1.00 MOhm	0.990 MOhm	1.004 MOhm	1.010 MOhm	Pass	9.96
75.00 Ohm	75.00 Ohm	74.250 Ohm	75.031 Ohm	75.750 Ohm	Pass	10.00
50.0 Ohm	50.0 Ohm	49.50 Ohm	50.10 Ohm	50.50 Ohm	Pass	9.98

Channel 4

10 mV/div						
1.00 MOhm	1.00 MOhm	0.990 MOhm	1.001 MOhm	1.010 MOhm	Pass	9.99
100 mV/div						
1.00 MOhm	1.00 MOhm	0.990 MOhm	1.005 MOhm	1.010 MOhm	Pass	9.95
75.00 Ohm	75.00 Ohm	74.250 Ohm	75.002 Ohm	75.750 Ohm	Pass	10.00
50.0 Ohm	50.0 Ohm	49.50 Ohm	50.10 Ohm	50.50 Ohm	Pass	9.98

Test Description	True Value	Lower Limit	Test Results	Upper Limit	Status	TSR
DC BALANCE						
Channel 1						
50 O, 20 MHz Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.2 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.2 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.2 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	2 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
75 O, 20 MHz Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.2 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.2 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	2 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
1 MO, 20 MHz Bandwidth						
1 mV/div	0.00 mV	-0.3 mV	0.1 mV	0.3 mV	Pass	
2 mV/div	0.00 mV	-0.4 mV	0.2 mV	0.4 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	2 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
50 O, 150 MHz Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.2 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	2 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
1 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.0 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.2 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
1 MO, 150 MHz Bandwidth						
1 mV/div	0.00 mV	-0.3 mV	0.1 mV	0.3 mV	Pass	
2 mV/div	0.00 mV	-0.4 mV	0.0 mV	0.4 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
50 O, Full Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.2 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	2 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
75 O, Full Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.0 mV	0.5 mV	Pass	

Test Description	True Value	Lower Limit	Test Results	Upper Limit	Status	TSR
10 mV/div	0.00 mV	-2.0 mV	0.2 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
1 MO, Full Bandwidth						
1 mV/div	0.00 mV	-0.3 mV	0.1 mV	0.3 mV	Pass	
2 mV/div	0.00 mV	-0.4 mV	0.0 mV	0.4 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.2 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
Channel 2						
50 O, 20 MHz Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.2 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	2 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
75 O, 20 MHz Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.2 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	2 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
1 MO, 20 MHz Bandwidth						
1 mV/div	0.00 mV	-0.3 mV	0.1 mV	0.3 mV	Pass	
2 mV/div	0.00 mV	-0.4 mV	0.1 mV	0.4 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	2 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
50 O, 150 MHz Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.0 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.0 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
1 mV/div	0.00 mV	-0.5 mV	0.0 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.0 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
1 MO, 150 MHz Bandwidth						
1 mV/div	0.00 mV	-0.3 mV	0.0 mV	0.3 mV	Pass	
2 mV/div	0.00 mV	-0.4 mV	0.0 mV	0.4 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
50 O, Full Bandwidth						

Test Description	True Value	Lower Limit	Test Results	Upper Limit	Status	TSR
1 mV/div	0.00 mV	-0.5 mV	0.0 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.0 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
75 Ω, Full Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.0 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.0 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
1 MΩ, Full Bandwidth						
1 mV/div	0.00 mV	-0.3 mV	0.0 mV	0.3 mV	Pass	
2 mV/div	0.00 mV	-0.4 mV	0.0 mV	0.4 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
Channel 3						
50 Ω, 20 MHz Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.2 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.2 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.3 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
75 Ω, 20 MHz Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.2 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
1 MΩ, 20 MHz Bandwidth						
1 mV/div	0.00 mV	-0.3 mV	0.0 mV	0.3 mV	Pass	
2 mV/div	0.00 mV	-0.4 mV	0.1 mV	0.4 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.0 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
50 Ω, 150 MHz Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.2 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.2 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.2 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
1 mV/div	0.00 mV	-0.5 mV	0.0 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	

Test Description	True Value	Lower Limit	Test Results	Upper Limit	Status	TSR
1 MO, 150 MHz Bandwidth						
1 mV/div	0.00 mV	-0.3 mV	0.0 mV	0.3 mV	Pass	
2 mV/div	0.00 mV	-0.4 mV	0.0 mV	0.4 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
50 O, Full Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.2 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.2 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.2 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
75 O, Full Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.2 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
1 MO, Full Bandwidth						
1 mV/div	0.00 mV	-0.3 mV	0.1 mV	0.3 mV	Pass	
2 mV/div	0.00 mV	-0.4 mV	0.1 mV	0.4 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
Channel 4						
50 O, 20 MHz Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.2 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
75 O, 20 MHz Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.0 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.2 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	2 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
1 MO, 20 MHz Bandwidth						
1 mV/div	0.00 mV	-0.3 mV	0.0 mV	0.3 mV	Pass	
2 mV/div	0.00 mV	-0.4 mV	0.1 mV	0.4 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.0 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
50 O, 150 MHz Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	

Test Description	True Value	Lower Limit	Test Results	Upper Limit	Status	TSR
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	0 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
1 mV/div	0.00 mV	-0.5 mV	0.0 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
1 MO, 150 MHz Bandwidth						
1 mV/div	0.00 mV	-0.3 mV	0.0 mV	0.3 mV	Pass	
2 mV/div	0.00 mV	-0.4 mV	0.1 mV	0.4 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
50 O, Full Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	0 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
75 O, Full Bandwidth						
1 mV/div	0.00 mV	-0.5 mV	0.0 mV	0.5 mV	Pass	
2 mV/div	0.00 mV	-0.5 mV	0.1 mV	0.5 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	
1 MO, Full Bandwidth						
1 mV/div	0.00 mV	-0.3 mV	0.0 mV	0.3 mV	Pass	
2 mV/div	0.00 mV	-0.4 mV	0.0 mV	0.4 mV	Pass	
10 mV/div	0.00 mV	-2.0 mV	0.1 mV	2.0 mV	Pass	
100 mV/div	0.0 mV	-20 mV	1 mV	20 mV	Pass	
1 V/div	0.00 V	-0.2 V	0.0 V	0.2 V	Pass	

ANALOG BANDWIDTH 50 O

Channel 1

5 mV/div

Bound:>=0.707, 31.5-->27.8 mVpp (300 MHz), Gain:0.883

Pass

2 mV/div

Bound:>=0.707, 13.2-->11.4 mVpp (250 MHz), Gain:0.866

Pass

1 mV/div

Bound:>=0.707, 6.9-->5.5 mVpp (150 MHz), Gain:0.793

Pass

Channel 2

5 mV/div

Bound:>=0.707, 31.4-->27.2 mVpp (300 MHz), Gain:0.868

Pass

Test Description	True Value	Lower Limit	Test Results	Upper Limit	Status	TSR
2 mV/div						
Bound:>=0.707, 13.1-->11.6 mVpp (250 MHz), Gain:0.886					Pass	
1 mV/div						
Bound:>=0.707, 6.9-->5.5 mVpp (150 MHz), Gain:0.799					Pass	
Channel 3						
5 mV/div						
Bound:>=0.707, 31.3-->26.7 mVpp (300 MHz), Gain:0.852					Pass	
2 mV/div						
Bound:>=0.707, 13.1-->11.3 mVpp (250 MHz), Gain:0.865					Pass	
1 mV/div						
Bound:>=0.707, 6.9-->5.4 mVpp (150 MHz), Gain:0.793					Pass	
Channel 4						
5 mV/div						
Bound:>=0.707, 31.4-->27.1 mVpp (300 MHz), Gain:0.865					Pass	
2 mV/div						
Bound:>=0.707, 13.2-->11.4 mVpp (250 MHz), Gain:0.863					Pass	
1 mV/div						
Bound:>=0.707, 6.9-->5.5 mVpp (150 MHz), Gain:0.797					Pass	
DCV GAIN ACCURACY						
Channel 1 20 MHz BW						
1 M	0.00 %	-2.5 %	0.2 %	2.5 %	Pass	2.39
1 M	0.00 %	-2.0 %	0.2 %	2.0 %	Pass	3.70
1 M	0.00 %	-3.0 %	0.5 %	3.0 %	Pass	12.59
1 M	0.00 %	-1.5 %	0.2 %	1.5 %	Pass	6.32
1 M	0.00 %	-1.5 %	0.2 %	1.5 %	Pass	11.00
1 M	0.00 %	-1.5 %	0.0 %	1.5 %	Pass	17.47
1 M	0.00 %	-3.0 %	0.6 %	3.0 %	Pass	53.92
1 M	0.00 %	-1.5 %	0.2 %	1.5 %	Pass	27.00
1 M	0.00 %	-1.5 %	0.2 %	1.5 %	Pass	33.00
1 M	0.00 %	-1.5 %	0.1 %	1.5 %	Pass	37.12
1 M	0.00 %	-1.5 %	0.2 %	1.5 %	Pass	40.13
1 M	0.00 %	-1.5 %	0.1 %	1.5 %	Pass	41.25
Channel 2 20 MHz BW						
1 M	0.00 %	-2.5 %	0.2 %	2.5 %	Pass	2.39
1 M	0.00 %	-2.0 %	0.1 %	2.0 %	Pass	3.70
1 M	0.00 %	-3.0 %	0.4 %	3.0 %	Pass	12.59
1 M	0.00 %	-1.5 %	0.2 %	1.5 %	Pass	6.32
1 M	0.00 %	-1.5 %	0.1 %	1.5 %	Pass	11.00
1 M	0.00 %	-1.5 %	-0.1 %	1.5 %	Pass	17.47
1 M	0.00 %	-3.0 %	0.4 %	3.0 %	Pass	53.92
1 M	0.00 %	-1.5 %	-0.2 %	1.5 %	Pass	27.00
1 M	0.00 %	-1.5 %	0.2 %	1.5 %	Pass	33.00

Test Description	True Value	Lower Limit	Test Results	Upper Limit	Status	TSR
1 M	0.00 %	-1.5 %	-0.1 %	1.5 %	Pass	37.12
1 M	0.00 %	-1.5 %	-0.1 %	1.5 %	Pass	40.13
1 M	0.00 %	-1.5 %	0.0 %	1.5 %	Pass	41.25
Channel 3 20 MHz BW						
1 M	0.00 %	-2.5 %	0.0 %	2.5 %	Pass	2.39
1 M	0.00 %	-2.0 %	0.0 %	2.0 %	Pass	3.70
1 M	0.00 %	-3.0 %	-0.1 %	3.0 %	Pass	12.59
1 M	0.00 %	-1.5 %	0.0 %	1.5 %	Pass	6.32
1 M	0.00 %	-1.5 %	0.1 %	1.5 %	Pass	11.00
1 M	0.00 %	-1.5 %	0.0 %	1.5 %	Pass	17.47
1 M	0.00 %	-3.0 %	0.1 %	3.0 %	Pass	53.92
1 M	0.00 %	-1.5 %	-0.1 %	1.5 %	Pass	27.00
1 M	0.00 %	-1.5 %	0.1 %	1.5 %	Pass	33.00
1 M	0.00 %	-1.5 %	0.0 %	1.5 %	Pass	37.12
1 M	0.00 %	-1.5 %	-0.1 %	1.5 %	Pass	40.13
1 M	0.00 %	-1.5 %	0.1 %	1.5 %	Pass	41.25
Channel 4 20 MHz BW						
1 M	0.00 %	-2.5 %	-0.2 %	2.5 %	Pass	2.39
1 M	0.00 %	-2.0 %	0.2 %	2.0 %	Pass	3.70
1 M	0.00 %	-3.0 %	0.6 %	3.0 %	Pass	12.59
1 M	0.00 %	-1.5 %	0.3 %	1.5 %	Pass	6.32
1 M	0.00 %	-1.5 %	0.2 %	1.5 %	Pass	11.00
1 M	0.00 %	-1.5 %	-0.1 %	1.5 %	Pass	17.47
1 M	0.00 %	-3.0 %	0.3 %	3.0 %	Pass	53.92
1 M	0.00 %	-1.5 %	0.2 %	1.5 %	Pass	27.00
1 M	0.00 %	-1.5 %	0.2 %	1.5 %	Pass	33.00
1 M	0.00 %	-1.5 %	-0.1 %	1.5 %	Pass	37.12
1 M	0.00 %	-1.5 %	0.2 %	1.5 %	Pass	40.13
1 M	0.00 %	-1.5 %	0.1 %	1.5 %	Pass	41.25
OFFSET ACCURACY						
Channel 1						
1 MO, 1 mV/div						
700.0 mV	700.00 mV	696.2 mV	699.1 mV	703.8 mV	Pass	19.00
-700.0 mV	-700.00 mV	-703.8 mV	-700.6 mV	-696.2 mV	Pass	19.00
1 MO, 2 mV/div						
700.0 mV	700.00 mV	696.1 mV	699.2 mV	703.9 mV	Pass	19.50
-700.0 mV	-700.00 mV	-703.9 mV	-700.6 mV	-696.1 mV	Pass	19.50
1 MO, 10 mV/div						
1000 mV	1000.0 mV	993 mV	999 mV	1007 mV	Pass	25.45
-1000 mV	-1000.0 mV	-1007 mV	-1001 mV	-993 mV	Pass	25.45
1 MO, 100 mV/div						
10.000 V	10.0000 V	9.930 V	9.988 V	10.070 V	Pass	27.72
-10.000 V	-10.0000 V	-10.070 V	-10.014 V	-9.930 V	Pass	27.72
1 MO, 1 V/div						
100.00 V	100.000 V	99.30 V	99.75 V	100.70 V	Pass	27.97
-100.00 V	-100.000 V	-100.70 V	-100.05 V	-99.30 V	Pass	27.97

Test Description	True Value	Lower Limit	Test Results	Upper Limit	Status	TSR
1 MO, 1.01 V/div						
100.00 V	100.000 V	99.30 V	99.75 V	100.70 V	Pass	27.97
-100.00 V	-100.000 V	-100.70 V	-100.05 V	-99.30 V	Pass	27.97
Channel 2						
1 MO, 1 mV/div						
700.0 mV	700.00 mV	696.2 mV	699.0 mV	703.8 mV	Pass	19.00
-700.0 mV	-700.00 mV	-703.8 mV	-700.5 mV	-696.2 mV	Pass	19.00
1 MO, 2 mV/div						
700.0 mV	700.00 mV	696.1 mV	699.1 mV	703.9 mV	Pass	19.50
-700.0 mV	-700.00 mV	-703.9 mV	-700.4 mV	-696.1 mV	Pass	19.50
1 MO, 10 mV/div						
1000 mV	1000.0 mV	993 mV	999 mV	1007 mV	Pass	25.45
-1000 mV	-1000.0 mV	-1007 mV	-1001 mV	-993 mV	Pass	25.45
1 MO, 100 mV/div						
10.000 V	10.0000 V	9.930 V	9.989 V	10.070 V	Pass	27.72
-10.000 V	-10.0000 V	-10.070 V	-10.007 V	-9.930 V	Pass	27.72
1 MO, 1 V/div						
100.00 V	100.000 V	99.30 V	99.71 V	100.70 V	Pass	27.97
-100.00 V	-100.000 V	-100.70 V	-100.00 V	-99.30 V	Pass	27.97
1 MO, 1.01 V/div						
100.00 V	100.000 V	99.30 V	99.71 V	100.70 V	Pass	27.97
-100.00 V	-100.000 V	-100.70 V	-100.00 V	-99.30 V	Pass	27.97
Channel 3						
1 MO, 1 mV/div						
700.0 mV	700.00 mV	696.2 mV	699.4 mV	703.8 mV	Pass	19.00
-700.0 mV	-700.00 mV	-703.8 mV	-700.3 mV	-696.2 mV	Pass	19.00
1 MO, 2 mV/div						
700.0 mV	700.00 mV	696.1 mV	699.4 mV	703.9 mV	Pass	19.50
-700.0 mV	-700.00 mV	-703.9 mV	-700.3 mV	-696.1 mV	Pass	19.50
1 MO, 10 mV/div						
1000 mV	1000.0 mV	993 mV	999 mV	1007 mV	Pass	25.45
-1000 mV	-1000.0 mV	-1007 mV	-1001 mV	-993 mV	Pass	25.45
1 MO, 100 mV/div						
10.000 V	10.0000 V	9.930 V	9.989 V	10.070 V	Pass	27.72
-10.000 V	-10.0000 V	-10.070 V	-10.003 V	-9.930 V	Pass	27.72
1 MO, 1 V/div						
100.00 V	100.000 V	99.30 V	99.78 V	100.70 V	Pass	27.97
-100.00 V	-100.000 V	-100.70 V	-99.99 V	-99.30 V	Pass	27.97
1 MO, 1.01 V/div						
100.00 V	100.000 V	99.30 V	99.78 V	100.70 V	Pass	27.97

Test Description	True Value	Lower Limit	Test Results	Upper Limit	Status	TSR
-100.00 V	-100.000 V	-100.70 V	-99.99 V	-99.30 V	Pass	27.97
Channel 4						
1 MO, 1 mV/div						
700.0 mV	700.00 mV	696.2 mV	698.9 mV	703.8 mV	Pass	19.00
-700.0 mV	-700.00 mV	-703.8 mV	-700.8 mV	-696.2 mV	Pass	19.00
1 MO, 2 mV/div						
700.0 mV	700.00 mV	696.1 mV	699.0 mV	703.9 mV	Pass	19.50
-700.0 mV	-700.00 mV	-703.9 mV	-700.8 mV	-696.1 mV	Pass	19.50
1 MO, 10 mV/div						
1000 mV	1000.0 mV	993 mV	999 mV	1007 mV	Pass	25.45
-1000 mV	-1000.0 mV	-1007 mV	-1001 mV	-993 mV	Pass	25.45
1 MO, 100 mV/div						
10.000 V	10.0000 V	9.930 V	9.988 V	10.070 V	Pass	27.72
-10.000 V	-10.0000 V	-10.070 V	-10.015 V	-9.930 V	Pass	27.72
1 MO, 1 V/div						
100.00 V	100.000 V	99.30 V	99.70 V	100.70 V	Pass	27.97
-100.00 V	-100.000 V	-100.70 V	-100.05 V	-99.30 V	Pass	27.97
1 MO, 1.01 V/div						
100.00 V	100.000 V	99.30 V	99.70 V	100.70 V	Pass	27.97
-100.00 V	-100.000 V	-100.70 V	-100.05 V	-99.30 V	Pass	27.97
SAMPLE RATE AND DELAY TIME ACCURACY						
Limit : ± 2 div @ 400 ns/div, 80.0 ms delay time					Pass	
AUXILIARY (TRIGGER) OUTPUT						
1 MO						
Low Limit: ≥ 3.25 V, Result: 3.60 V					Pass	
High Limit: ≤ 0.4 V, Result: 0.2 V					Pass	
50 O						
Low Limit: ≥ 2.2 V, Result: 2.5 V					Pass	
High Limit: ≤ 0.3 V, Result: 0.16 V					Pass	
RANDOM NOISE: Channel 1						
50 O						
Bandwidth: Full	0.0000 mV	0.000 mV	2.062 mV	6.140 mV	Pass	
Bandwidth: 150 MHz Limit	0.0000 mV	0.000 mV	2.065 mV	6.080 mV	Pass	
Bandwidth: 20 MHz Limit	0.0000 mV	0.000 mV	1.226 mV	5.030 mV	Pass	
RANDOM NOISE: Channel 2						
50 O						
Bandwidth: Full	0.0000 mV	0.000 mV	1.790 mV	6.140 mV	Pass	
Bandwidth: 150 MHz Limit	0.0000 mV	0.000 mV	1.705 mV	6.080 mV	Pass	
Bandwidth: 20 MHz Limit	0.0000 mV	0.000 mV	1.147 mV	5.030 mV	Pass	
RANDOM NOISE: Channel 3						

Test Description	True Value	Lower Limit	Test Results	Upper Limit	Status	TSR
50 O						
Bandwidth: Full	0.0000 mV	0.000 mV	2.048 mV	6.140 mV	Pass	
Bandwidth: 150 MHz Limit	0.0000 mV	0.000 mV	1.907 mV	6.080 mV	Pass	
Bandwidth: 20 MHz Limit	0.0000 mV	0.000 mV	1.183 mV	5.030 mV	Pass	
RANDOM NOISE: Channel 4						
50 O						
Bandwidth: Full	0.0000 mV	0.000 mV	2.125 mV	6.140 mV	Pass	
Bandwidth: 150 MHz Limit	0.0000 mV	0.000 mV	1.964 mV	6.080 mV	Pass	
Bandwidth: 20 MHz Limit	0.0000 mV	0.000 mV	1.617 mV	5.030 mV	Pass	
DELTA TIME ACCURACY						
Channel 1						
240 MHz, 4 ns/div						
5 mV/div	0.0 ps	0 ps	0 ps	240 ps	Pass	230399.94
100 mV/div	0.0 ps	0 ps	0 ps	240 ps	Pass	230399.94
500 mV/div	0.0 ps	0 ps	0 ps	240 ps	Pass	230399.94
1 V/div	0.0 ps	0 ps	0 ps	240 ps	Pass	230399.94
24 MHz, 40 ns/div						
5 mV/div	0.0 ps	0 ps	0 ps	450 ps	Pass	43199.99
100 mV/div	0.0 ps	0 ps	0 ps	360 ps	Pass	34559.99
500 mV/div	0.0 ps	0 ps	0 ps	360 ps	Pass	34559.99
1 V/div	0.0 ps	0 ps	0 ps	590 ps	Pass	56639.99
2.4 MHz, 400 ns/div						
5 mV/div	0.000 ns	0.00 ns	0.00 ns	3.80 ns	Pass	36479.99
100 mV/div	0.000 ns	0.00 ns	0.00 ns	2.80 ns	Pass	26879.99
500 mV/div	0.000 ns	0.00 ns	0.00 ns	2.80 ns	Pass	26879.99
1 V/div	0.000 ns	0.00 ns	0.00 ns	5.40 ns	Pass	51839.99
240 KHz, 4 μs/div						
5 mV/div	0.00 ns	0.0 ns	0.0 ns	38.0 ns	Pass	36479.99
100 mV/div	0.00 ns	0.0 ns	0.0 ns	28.0 ns	Pass	26879.99
500 mV/div	0.00 ns	0.0 ns	0.0 ns	28.0 ns	Pass	26879.99
1 V/div	0.00 ns	0.0 ns	0.0 ns	54.0 ns	Pass	51839.99
24 KHz, 40 μs/div						
5 mV/div	0.0 ns	0 ns	0 ns	380 ns	Pass	36479.99
100 mV/div	0.0 ns	0 ns	0 ns	280 ns	Pass	26879.99
500 mV/div	0.0 ns	0 ns	0 ns	280 ns	Pass	26879.99
1 V/div	0.0 ns	0 ns	0 ns	540 ns	Pass	51839.99
2.4 KHz, 400 μs/div						
5 mV/div	0.000 μs	0.00 μs	0.00 μs	3.80 μs	Pass	3039.99
100 mV/div	0.000 μs	0.00 μs	0.00 μs	2.80 μs	Pass	2239.99
500 mV/div	0.000 μs	0.00 μs	0.00 μs	2.80 μs	Pass	2239.99
1 V/div	0.000 μs	0.00 μs	0.00 μs	5.40 μs	Pass	4319.99
Channel 2						

Test Description	True Value	Lower Limit	Test Results	Upper Limit	Status	TSR
240 MHz, 4 ns/div						
5 mV/div	0.0 ps	0 ps	0 ps	240 ps	Pass	230399.94
100 mV/div	0.0 ps	0 ps	0 ps	240 ps	Pass	230399.94
500 mV/div	0.0 ps	0 ps	0 ps	240 ps	Pass	230399.94
1 V/div	0.0 ps	0 ps	0 ps	240 ps	Pass	230399.94
24 MHz, 40 ns/div						
5 mV/div	0.0 ps	0 ps	0 ps	450 ps	Pass	43199.99
100 mV/div	0.0 ps	0 ps	0 ps	360 ps	Pass	34559.99
500 mV/div	0.0 ps	0 ps	0 ps	360 ps	Pass	34559.99
1 V/div	0.0 ps	0 ps	0 ps	590 ps	Pass	56639.99
2.4 MHz, 400 ns/div						
5 mV/div	0.000 ns	0.00 ns	0.00 ns	3.80 ns	Pass	36479.99
100 mV/div	0.000 ns	0.00 ns	0.00 ns	2.80 ns	Pass	26879.99
500 mV/div	0.000 ns	0.00 ns	0.00 ns	2.80 ns	Pass	26879.99
1 V/div	0.000 ns	0.00 ns	0.00 ns	5.40 ns	Pass	51839.99
240 KHz, 4 μ s/div						
5 mV/div	0.00 ns	0.0 ns	0.0 ns	38.0 ns	Pass	36479.99
100 mV/div	0.00 ns	0.0 ns	0.0 ns	28.0 ns	Pass	26879.99
500 mV/div	0.00 ns	0.0 ns	0.0 ns	28.0 ns	Pass	26879.99
1 V/div	0.00 ns	0.0 ns	0.0 ns	54.0 ns	Pass	51839.99
24 KHz, 40 μ s/div						
5 mV/div	0.0 ns	0 ns	0 ns	380 ns	Pass	36479.99
100 mV/div	0.0 ns	0 ns	0 ns	280 ns	Pass	26879.99
500 mV/div	0.0 ns	0 ns	0 ns	280 ns	Pass	26879.99
1 V/div	0.0 ns	0 ns	0 ns	540 ns	Pass	51839.99
2.4 KHz, 400 μ s/div						
5 mV/div	0.000 μ s	0.00 μ s	0.00 μ s	3.80 μ s	Pass	3039.99
100 mV/div	0.000 μ s	0.00 μ s	0.00 μ s	2.80 μ s	Pass	2239.99
500 mV/div	0.000 μ s	0.00 μ s	0.00 μ s	2.80 μ s	Pass	2239.99
1 V/div	0.000 μ s	0.00 μ s	0.00 μ s	5.40 μ s	Pass	4319.99
Channel 3						
240 MHz, 4 ns/div						
5 mV/div	0.0 ps	0 ps	0 ps	240 ps	Pass	230399.94
100 mV/div	0.0 ps	0 ps	0 ps	240 ps	Pass	230399.94
500 mV/div	0.0 ps	0 ps	0 ps	240 ps	Pass	230399.94
1 V/div	0.0 ps	0 ps	0 ps	240 ps	Pass	230399.94
24 MHz, 40 ns/div						
5 mV/div	0.0 ps	0 ps	0 ps	450 ps	Pass	43199.99
100 mV/div	0.0 ps	0 ps	0 ps	360 ps	Pass	34559.99
500 mV/div	0.0 ps	0 ps	0 ps	360 ps	Pass	34559.99
1 V/div	0.0 ps	0 ps	0 ps	590 ps	Pass	56639.99
2.4 MHz, 400 ns/div						
5 mV/div	0.000 ns	0.00 ns	0.00 ns	3.80 ns	Pass	36479.99
100 mV/div	0.000 ns	0.00 ns	0.00 ns	2.80 ns	Pass	26879.99
500 mV/div	0.000 ns	0.00 ns	0.00 ns	2.80 ns	Pass	26879.99
1 V/div	0.000 ns	0.00 ns	0.00 ns	5.40 ns	Pass	51839.99

Test Description	True Value	Lower Limit	Test Results	Upper Limit	Status	TSR
240 KHz, 4 μ s/div						
5 mV/div	0.00 ns	0.0 ns	0.0 ns	38.0 ns	Pass	36479.99
100 mV/div	0.00 ns	0.0 ns	0.0 ns	28.0 ns	Pass	26879.99
500 mV/div	0.00 ns	0.0 ns	0.0 ns	28.0 ns	Pass	26879.99
1 V/div	0.00 ns	0.0 ns	0.0 ns	54.0 ns	Pass	51839.99
24 KHz, 40 μ s/div						
5 mV/div	0.0 ns	0 ns	0 ns	380 ns	Pass	36479.99
100 mV/div	0.0 ns	0 ns	0 ns	280 ns	Pass	26879.99
500 mV/div	0.0 ns	0 ns	0 ns	280 ns	Pass	26879.99
1 V/div	0.0 ns	0 ns	0 ns	540 ns	Pass	51839.99
2.4 KHz, 400 μ s/div						
5 mV/div	0.000 μ s	0.00 μ s	0.00 μ s	3.80 μ s	Pass	3039.99
100 mV/div	0.000 μ s	0.00 μ s	0.00 μ s	2.80 μ s	Pass	2239.99
500 mV/div	0.000 μ s	0.00 μ s	0.00 μ s	2.80 μ s	Pass	2239.99
1 V/div	0.000 μ s	0.00 μ s	0.00 μ s	5.40 μ s	Pass	4319.99
Channel 4						
240 MHz, 4 ns/div						
5 mV/div	0.0 ps	0 ps	0 ps	240 ps	Pass	230399.94
100 mV/div	0.0 ps	0 ps	0 ps	240 ps	Pass	230399.94
500 mV/div	0.0 ps	0 ps	0 ps	240 ps	Pass	230399.94
1 V/div	0.0 ps	0 ps	0 ps	240 ps	Pass	230399.94
24 MHz, 40 ns/div						
5 mV/div	0.0 ps	0 ps	0 ps	450 ps	Pass	43199.99
100 mV/div	0.0 ps	0 ps	0 ps	360 ps	Pass	34559.99
500 mV/div	0.0 ps	0 ps	0 ps	360 ps	Pass	34559.99
1 V/div	0.0 ps	0 ps	0 ps	590 ps	Pass	56639.99
2.4 MHz, 400 ns/div						
5 mV/div	0.000 ns	0.00 ns	0.00 ns	3.80 ns	Pass	36479.99
100 mV/div	0.000 ns	0.00 ns	0.00 ns	2.80 ns	Pass	26879.99
500 mV/div	0.000 ns	0.00 ns	0.00 ns	2.80 ns	Pass	26879.99
1 V/div	0.000 ns	0.00 ns	0.00 ns	5.40 ns	Pass	51839.99
240 KHz, 4 μ s/div						
5 mV/div	0.00 ns	0.0 ns	0.0 ns	38.0 ns	Pass	36479.99
100 mV/div	0.00 ns	0.0 ns	0.0 ns	28.0 ns	Pass	26879.99
500 mV/div	0.00 ns	0.0 ns	0.0 ns	28.0 ns	Pass	26879.99
1 V/div	0.00 ns	0.0 ns	0.0 ns	54.0 ns	Pass	51839.99
24 KHz, 40 μ s/div						
5 mV/div	0.0 ns	0 ns	0 ns	380 ns	Pass	36479.99
100 mV/div	0.0 ns	0 ns	0 ns	280 ns	Pass	26879.99
500 mV/div	0.0 ns	0 ns	0 ns	280 ns	Pass	26879.99
1 V/div	0.0 ns	0 ns	0 ns	540 ns	Pass	51839.99
2.4 KHz, 400 μ s/div						
5 mV/div	0.000 μ s	0.00 μ s	0.00 μ s	3.80 μ s	Pass	3039.99
100 mV/div	0.000 μ s	0.00 μ s	0.00 μ s	2.80 μ s	Pass	2239.99
500 mV/div	0.000 μ s	0.00 μ s	0.00 μ s	2.80 μ s	Pass	2239.99

Test Description	True Value	Lower Limit	Test Results	Upper Limit	Status	TSR
1 V/div	0.000 μ s	0.00 μ s	0.00 μ s	5.40 μ s	Pass	4319.99

-- End of measurement results--