5 Series
Mixed Signal Oscilloscopes (MSO54, MSO56, MSO58)
Specifications and Performance Verification

077-1306-00

Tektronix®

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Specifications and Performance Verification

Warning

The servicing instructions are for use by qualified personnel only. To avoid personal injury, do not perform any servicing unless you are qualified to do so. Refer to all safety summaries prior to performing service.

Supports MSO5 Series Firmware V1.0 and above

www.tek.com
077-1306-00

Contacting Tektronix

Tektronix, Inc.
14150 SW Karl Braun Drive
P.O. Box 500
Beaverton, OR 97077
USA

For product information, sales, service, and technical support:

- In North America, call 1-800-833-9200.
- Worldwide, visit *www.tek.com* to find contacts in your area.

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Important safety information

This manual contains information and warnings that must be followed by the user for safe operation and to keep the product in a safe condition.

General safety summary

Use the product only as specified. Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it. Carefully read all instructions. Retain these instructions for future reference.

Comply with local and national safety codes.

For correct and safe operation of the product, it is essential that you follow generally accepted safety procedures in addition to the safety precautions specified in this manual.

The product is designed to be used by trained personnel only.

Only qualified personnel who are aware of the hazards involved should remove the cover for repair, maintenance, or adjustment.

Before use, always check the product with a known source to be sure it is operating correctly.

This product is not intended for detection of hazardous voltages.

Use personal protective equipment to prevent shock and arc blast injury where hazardous live conductors are exposed.

To avoid fire or personal injury

Use proper power cord. Use only the power cord specified for this product and certified for the country of use. Do not use the provided power cord for other products.

Ground the product. This product is grounded through the grounding conductor of the power cord. To avoid electric shock, the grounding conductor must be connected to earth ground. Before making connections to the input or output terminals of the product, ensure that the product is properly grounded. Do not disable the power cord grounding connection.

Power disconnect. The power cord disconnects the product from the power source. See instructions for the location. Do not position the equipment so that it is difficult to operate the power cord; it must remain accessible to the user at all times to allow for quick disconnection if needed.

Connect and disconnect properly. Do not connect or disconnect probes or test leads while they are connected to a voltage source. Use only insulated voltage probes, test leads, and adapters supplied with the product, or indicated by Tektronix to be suitable for the product.

Observe all terminal ratings. To avoid fire or shock hazard, observe all rating and markings on the product. Consult the product manual for further ratings information before making connections to the product. Do not exceed the Measurement Category (CAT) rating and voltage or current rating of the lowest rated individual component of a product, probe, or accessory. Use caution when using 1:1 test leads because the probe tip voltage is directly transmitted to the product.

Do not apply a potential to any terminal, including the common terminal, that exceeds the maximum rating of that terminal.

Do not operate without covers. Do not operate this product with covers or panels removed, or with the case open. Hazardous voltage exposure is possible.

Avoid exposed circuitry. Do not touch exposed connections and components when power is present.

Do not operate with suspected failures. If you suspect that there is damage to this product, have it inspected by qualified service personnel.

Disable the product if it is damaged. Do not use the product if it is damaged or operates incorrectly. If in doubt about safety of the product, turn it off and disconnect the power cord. Clearly mark the product to prevent its further operation.

Before use, inspect voltage probes, test leads, and accessories for mechanical damage and replace when damaged. Do not use probes or test leads if they are damaged, if there is exposed metal, or if a wear indicator shows.

Examine the exterior of the product before you use it. Look for cracks or missing pieces.

Use only specified replacement parts.

Do not operate in wet/damp conditions. Be aware that condensation may occur if a unit is moved from a cold to a warm environment.

Do not operate in an explosive atmosphere.

Keep product surfaces clean and dry. Remove the input signals before you clean the product.

Provide proper ventilation. Refer to the manual's installation instructions for details on installing the product so it has proper ventilation.

Slots and openings are provided for ventilation and should never be covered or otherwise obstructed. Do not push objects into any of the openings.

Provide a safe working environment. Always place the product in a location convenient for viewing the display and indicators.

Avoid improper or prolonged use of keyboards, pointers, and button pads. Improper or prolonged keyboard or pointer use may result in serious injury.

Be sure your work area meets applicable ergonomic standards. Consult with an ergonomics professional to avoid stress injuries.

Use care when lifting and carrying the product. This product is provided with handles for lifting and carrying.

***WARNING.** The product is heavy. To reduce the risk of personal injury or damage to the device get help when lifting or carrying the product.*

Use only the Tektronix rackmount hardware specified for this product.

Probes and test leads

Before connecting probes or test leads, connect the power cord from the power connector to a properly grounded power outlet.

Keep fingers behind the finger guards on the probes.

Remove all probes, test leads and accessories that are not in use.

Use only correct Measurement Category (CAT), voltage, temperature, altitude, and amperage rated probes, test leads, and adapters for any measurement.

Terms in the manual

These terms may appear in this manual:

WARNING. *Warning statements identify conditions or practices that could result in injury or loss of life.*

CAUTION. *Caution statements identify conditions or practices that could result in damage to this product or other property.*

Terms on the product

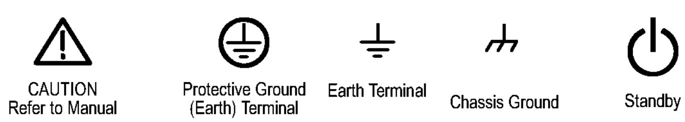
These terms may appear on the product:

- DANGER indicates an injury hazard immediately accessible as you read the marking.
- WARNING indicates an injury hazard not immediately accessible as you read the marking.
- CAUTION indicates a hazard to property including the product.

Symbols on the product

When this symbol is marked on the product, be sure to consult the manual to find out the nature of the potential hazards and any actions which have to be taken to avoid them. (This symbol may also be used to refer the user to ratings in the manual.)

The following symbols may appear on the product:



Specifications

This chapter contains specifications for the instrument. All specifications are guaranteed unless noted as "typical." Typical specifications are provided for your convenience but are not guaranteed. Specifications that are marked with the ✓ symbol are checked in this manual. All specifications apply to all models unless noted otherwise.

To meet specifications, these conditions must first be met:

- The instrument must have been calibrated in an ambient temperature between 18 °C and 28 °C (64 °F and 82 °F).
- The instrument must be operating within the environmental limits. (See *Environmental specifications* on page 29.)
- The instrument must be powered from a source that meets the specifications. (See *Power supply system* on page 28.)
- The instrument must have been operating continuously for at least 20 minutes within the specified operating temperature range.
- You must perform the Signal Path Compensation procedure after the warmup period. See the online help for instructions on how to perform signal path compensation. If the ambient temperature changes more than 5 °C (9 °F) , repeat the procedure.

Analog channel input and vertical specification

Number of input channels	
MSO54	4 BNC
MSO56	6 BNC
MSO58	8 BNC
Input coupling	DC, AC
Input resistance selection	1 MΩ or 50 Ω
✓Input impedance 1 MΩ DC coupled	1 MΩ ±1%
Input capacitance 1 MΩ DC coupled, typical	14.5 pF ±1.5 pF, 2 GHz model 13 pF ±1.5 pF, 1 GHz, 500 MHz, 350 MHz models
✓Input impedance 50 Ω, DC coupled	50 Ω ±1% (VSWR ≤1.5:1, typical)
Maximum input voltage 1 MΩ	300 V_{RMS} at the BNC. Installation Category II Derate at 20 dB/decade between 4.5 MHz and 45 MHz; derate 14 dB/decade between 45 MHz and 450 MHz. Above 450 MHz, 5 V_{RMS}

	Maximum peak input voltage at the BNC: ±425 V
Maximum input voltage, 50 Ohm	5 V_{RMS}, with peaks ≤ ±20 V (DF ≤6.25%)
DC balance	✓ 0.1 div with DC-50 Ω oscilloscope input impedance (50 Ω BNC terminated) ✓ 0.2 div at 1 mV/div with DC-50 Ω oscilloscope input impedance (50 Ω BNC terminated) 0.4 div at 500 µV/div with DC-50 Ω oscilloscope input impedance (50 Ω BNC terminated) ✓ 0.2 div with DC-1 MΩ oscilloscope input impedance (50 Ω BNC terminated) 0.4 div at 500 µV/div with DC-1 MΩ scope input impedance (50 Ω BNC terminated) **NOTE.** *500 µV/div is a 2X digital zoom of 1 mV/div. As such, it is guaranteed by testing the 1 mV/div setting.*
Number of digitized bits	8 bits at 6.25 GS/s 12 bits at 3.125 GS/s 13 bits at 1.25 GS/s 14 bits at 625 MS/s 15 bits at 312.5 MS/s 16 bits at 125 MS/s Displayed vertically with 25 digitization levels (DL [1]) per division, (8-bits only) 10.24 divisions dynamic range.
Sensitivity range, coarse	
1 MΩ	500 µV/div to 10 V/div in a 1-2-5 sequence
50 Ω	500 µV/div to 1 V/div in a 1-2-5 sequence
Sensitivity range, fine	Allows continuous adjustment from 1 mV/div to 10 V/div, 1 MΩ and from 1 mV/div to 1 V/div, 50 Ω

500 µV/div to 10 V/div	1 MΩ
500 µV/div to 1 V/div	50 Ω

Sensitivity resolution, fine	≤1% of current setting
✓ DC gain accuracy	
2 GHz model, Step Gain, 50 Ohm	±1.2%, (±2.0% at 1 mV/div and 500 µV/div settings), de-rated at 0.100%/ °C above 30 °C
2 GHz model, Step Gain, 1 Meg Ohm	±1.0%, (±2.0% at 1 mV/div and 500 µV/div settings), de-rated at 0.100%/ °C above 30 °C
1 GHz, 500 MHz, 350 MHz models, Step Gain	±1.0%, (±2.0% at 1 mV/div and 500 µV/div settings), de-rated at 0.100%/ °C above 30 °C
Variable gain	±1.5%, derated at 0.100%/ °C above 30 °C.

[1] DL is the abbreviation for digitization level. A DL is the smallest voltage level change that can be resolved by an 8-bit A-D Converter. This value is also known as an LSB (least significant bit).

***NOTE.** 500 µV/div is a 2X digital zoom of 1 mV/div. As such, it is guaranteed by testing the 1 mV/div setting.*

Offset ranges, maximum

2 GHz models

Input signal cannot exceed maximum input voltage for the 50 Ω input path.

Volts/div Setting	50 Ω Input
	Offset Range
500 µV/div - 50 mV/div	±1 V
51 mV/div - 99 mV/div	± (-10 * (Volts/div Setting) + 1.5 V)
100 mV/div - 500 mV/div	±10 V
501 mV/div - 1 V/div	± (-10 * (Volts/div Setting) + 15 V)

Volts/div Setting	1 MΩ Input
	Offset Range
500 µV/div - 63 mV/div	±1 V
64 mV/div - 999 mV/div	±10 V
1 V/div - 10 V/div	±100 V

< 2 GHz models

Input signal cannot exceed maximum input voltage for the 50 Ω input path.

Volts/div Setting	Offset Range	
	50 Ω Input	1 MΩ Input
500 µV/div - 63 mV/div	±1 V	±1 V
64 mV/div - 999 mV/div	±10 V	±10 V
1 V/div - 10 V/div	±10 V	±100 V

***NOTE.** 500 µV/div is a 2X digital zoom of 1 mV/div. As such, it is guaranteed by testing the 1 mV/div setting.*

Position range

±5 divisions

Offset accuracy

±(0.005 X |offset - position | + DC balance)

Number of waveforms for average acquisition mode

2 to 10,240 Waveforms, default 16 waveforms

DC voltage measurement accuracy, Average acquisition mode

Measurement Type	DC Accuracy (In Volts)
Average of ≥ 16 waveforms	±((DC Gain Accuracy) * |reading - (offset - position)| + Offset Accuracy + 0.1 * V/div setting)
Delta volts between any two averages of ≥ 16 waveforms acquired with the same oscilloscope setup and ambient conditions	±(DC Gain Accuracy * |reading| + 0.05 div)

DC voltage measurement accuracy, sample acquisition mode, typical

Measurement Type	DC Accuracy (In Volts)
Any Sample	±(DC Gain Accuracy * |reading - (offset - position)| + Offset Accuracy + 0.15 div + 0.6 mV)
Delta Volts between any two samples acquired with the same scope setup and ambient conditions	±(DC Gain Accuracy * |reading| + 0.15 div + 1.2 mV)

Bandwidth selections 20 MHz, 250 MHz, and FULL

✓Analog bandwidth 50 Ω DC coupled

2 GHz models

Volts/Div Setting	Bandwidth
10 mV/div - 1 V/div	DC - 2.00 GHz
5 mV/div - 9.98 mV/div	DC - 1.50 GHz
2 mV/div - 4.98 mV/div	DC - 350 MHz
1 mV/div - 1.99 mV/div	DC - 175 MHz
500 μV/div - 995 μV/div	DC - 175 MHz

1 GHz models

Volts/Div Setting	Bandwidth
1 mV/div - 1 V/div	DC - 1.00 GHz
500 μV/div - 995 μV/div	DC - 250 MHz

500 MHz models

Volts/Div Setting	Bandwidth
1 mV/div - 1 V/div	DC - 500 MHz
500 μV/div - 995 μV/div	DC - 250 MHz

350 MHz models

Volts/Div Setting	Bandwidth
1 mV/div - 1 V/div	DC - 350 MHz
500 μV/div - 995 μV/div	DC - 250 MHz

Analog bandwidth, 1 MΩ, typical

2 GHz, 1 GHz, 500 MHz models

Volts/Div Setting	Bandwidth
1 mV/div - 10 V/div	DC - 500 MHz
500 µV/div - 995 µV/div	DC - 250 MHz

350 MHz models

Volts/Div Setting	Bandwidth
1 mV/div - 10 V/div	DC - 350 MHz
500 µV/div - 995 µV/div	DC - 250 MHz

Analog bandwidth with TPP0500 and TPP1000 probe, typical

The limits are for ambient temperature of ≤30 °C and the bandwidth selection set to FULL. Reduce the upper bandwidth frequency by 1% for each °C above 30 °C.

Instrument	Volts/Div Setting	Bandwidth
2 GHz, 1 GHz	5 mV/div - 100 V/div	DC - 1GHz (TPP1000 Probe)
500 MHz	5 mV/div - 100 V/div	DC - 500 MHz (TPP0500 Probe)
350 MHz	5 mV/div - 100 V/div	DC - 350 MHz (TPP0500 Probe)

Lower frequency limit, AC coupled, typical

<10 Hz when AC 1 MΩ coupled. The AC coupled lower frequency limits are reduced by a factor of 10 (<1 Hz) when 10X passive probes are used.

Upper frequency limit, 250 MHz bandwidth limited, typical

250 MHz, ± 25%

Upper frequency limit, 20 MHz bandwidth limited, typical

20 MHz, ± 20%

Calculated rise time, typical

Model	50 Ω	TPP0500 Probe	TP1000 Probe
Vertical	500 µV-1 V	5 mV-10 V	5 mV-10 V
2 GHz	225 ps	800 ps	400 ps
1 GHz	400 ps	800 ps	400 ps
500 MHz	800 ps	800 ps	800 ps
350 MHz	1.15 ns	1.15 ns	1.15 ns

Peak Detect or Envelope mode pulse response, typical

Minimum pulse width is >640 ps (6.25 GS/s)

Effective bits (ENOB), typical

Typical effective bits for a 9-division p-p sine-wave input, 50 mV/div, 50-ohm

2 GHz models, Sample mode, 50 Ω

Bandwidth	Input frequency	6.25 GS/s
2 GHz	10 MHz	6.20
2 GHz	600 MHz	6.20
250 MHz	10 MHz	7.30
250 MHz	200 MHz	7.30
20 MHz	10 MHz	7.60

2 GHz models, High Res mode, 50 Ω

Bandwidth	Input frequency	6.25 GS/s
1 GHz	10 MHz	7.00
1 GHz	300 MHz	7.00
250 MHz	10 MHz	7.80
250 MHz	100 MHz	7.80
20 MHz	10 MHz	8.70

1 GHz, 500 MHz, 350 MHz models, Sample mode, 50 Ω

Bandwidth	Input Frequency	6.25 GS/s
1 GHz	10 MHz	7.10
1 GHz	300 MHz	7.10
500 MHz	10 MHz	7.40
500 MHz	150 MHz	7.40
350 MHz	10 MHz	7.60
350 MHz	100 MHz	7.60
250 MHz	10 MHz	7.50
250 MHz	100 MHz	7.50
20 MHz	10 MHz	7.70

1 GHz, 500 MHz, 350 MHz models, High Res mode, 50 Ω

Bandwidth	Input frequency	6.25 GS/s
1 GHz	10 MHz	7.60
1 GHz	300 MHz	7.50
500 MHz	10 MHz	7.90
500 MHz	150 MHz	7.80
350 MHz	10 MHz	8.20
350 MHz	100 MHz	8.20
250 MHz	10 MHz	8.10
250 MHz	100 MHz	8.10
20 MHz	10 MHz	8.90

Random noise, sample acquisition mode

✓2 GHz models, Sample mode (RMS)

2 GHz models	50 Ω			1 MΩ		
V/div	2 GHz	250 MHz	20 MHz	500 MHz	250 MHz	20 MHz
1 mV/div [5]	89.8 μV	89.8 μV	39.6 μV	270 μV	158 μV	85.5 μV
2 mV/div [6]	152 μV	114 μV	50.6 μV	291 μV	158 μV	90.1 μV
5 mV/div [7]	456 μV	155 μV	88.9 μV	315 μV	185 μV	121 μV
10 mV/div	643 μV	244 μV	174 μV	377 μV	271 μV	201 μV
20 mV/div	1.06 mV	436 μV	347 μV	572 μV	462 μV	373 μV
50 mV/div	2.51 mV	1.06 mV	869 μV	1.32 mV	1.11 mV	922 μV
100 mV/div	6.15 mV	2.38 mV	1.74 mV	2.75 mV	2.24 mV	1.88 mV

5 Bandwidth at 1 mV/div is limited to 175 MHz in 50 Ω.
6 Bandwidth at 2 mV/div is limited to 350 MHz in 50 Ω.
7 Bandwidth at 5 mV/div is limited to 1.5 GHz in 50 Ω.

2 GHz models	50 Ω			1 MΩ		
V/div	2 GHz	250 MHz	20 MHz	500 MHz	250 MHz	20 MHz
1 V/div	39.6 mV	21.1 mV	17.4 mV	28.6 mV	23.5 mV	18.7 mV

2 GHz models, Sample mode (RMS), typical

2 GHz models	50 Ω			1 MΩ		
V/div	2 GHz	250 MHz	20 MHz	500 MHz	250 MHz	20 MHz
1 mV/div [5]	69.4 μV	69.4 μV	30.6 μV	208 μV	122 μV	66 μV
2 mV/div [6]	117 μV	88.0 μV	39.1 μV	225 μV	122 μV	69.7 μV
5 mV/div [7]	353 μV	120 μV	68.7 μV	243 μV	143 μV	93.8 μV
10 mV/div	497 μV	188 μV	125 μV	291 μV	209 μV	156 μV
20 mV/div	816 μV	337 μV	251 μV	442 μV	357 μV	288 μV
50 mV/div	1.94 mV	822 μV	627 μV	1.02 mV	857 μV	712 μV
100 mV/div	4.75 mV	1.84 mV	1.25 mV	2.13 mV	1.73 mV	1.45 mV
1 V/div	30.6 mV	16.3 mV	12.5 mV	22.1 mV	18.2 mV	14.5 mV

✓2 GHz models, High Res mode (RMS)

2 GHz models	50 Ω			1 MΩ		
V/div	1 GHz	250 MHz	20 MHz	500 MHz	250 MHz	20 MHz
1 mV/div[5]	86.5 μV	86.5 μV	35.2 μV	269 μV	152 μV	83.6 μV
2 mV/div[6]	125 μV	100 μV	36.9 μV	290 μV	152 μV	86.3 μV
5 mV/div[7]	261 μV	140 μV	48.4 μV	308 μV	172 μV	88.9 μV
10 mV/div	356 μV	191 μV	72.6 μV	359 μV	224 μV	108 μV
20 mV/div	607 μV	325 μV	137 μV	538 μV	360 μV	162 μV
50 mV/div	1.43 mV	763 μV	327 μV	1.19 mV	803 μV	351 μV
100 mV/div	3.56 mV	1.91 mV	779 μV	2.45 mV	1.76 mV	780 μV
1 V/div	23.8 mV	14 mV	6.05 mV	26.3 mV	18.9 mV	8.46 mV

2 GHz models, High Res mode (RMS), typical

2 GHz models	50 Ω			1 MΩ		
V/div	1 GHz	250 MHz	20 MHz	500 MHz	250 MHz	20 MHz
1 mV/div[5]	66.8 µV	66.8 µV	27.2 µV	208 µV	117 µV	64.6 µV
2 mV/div[6]	96.9 µV	77.5 µV	28.5 µV	224 µV	117 µV	66.7 µV
5 mV/div[7]	202 µV	108 µV	37.4 µV	238 µV	133 µV	68.7 µV
10 mV/div	275 µV	147 µV	56.1 µV	277 µV	173 µV	83.6 µV
20 mV/div	469 µV	251 µV	106 µV	416 µV	278 µV	125 µV
50 mV/div	1.10 mV	589 µV	253 µV	916 µV	620 µV	271 µV
100 mV/div	2.75 mV	1.47 mV	602 µV	1.90 mV	1.36 mV	603 µV
1 V/div	18.4 mV	10.8 mV	4.68 mV	20.3 mV	14.6 mV	6.54 mV

✓1 GHz, 500 MHz, 350 MHz models, Sample mode (RMS)

< 2 GHz models	50 Ω					1 MΩ			
V/div	1 GHz	500 MHz	350 MHz	250 Mhz	20 MHz	500 MHz	350 MHz	250 MHz	200 MHz
1 mV/div	372 µV	253 µV	181 µV	153 µV	91.4 µV	258 µV	188 µV	158 µV	87.9 µV
2 mV/div	376 µV	262 µV	190 µV	164 µV	102 µV	254 µV	193 µV	158 µV	92.0 µV
5 mV/div	395 µV	292 µV	222 µV	201 µV	136 µV	272 µV	207 µV	185 µV	116 µV
10 mV/div	449 µV	359 µV	284 µV	272 µV	197 µV	319 µV	264 µV	251 µV	188 µV
20 mV/div	614 µV	529 µV	436 µV	435 µV	347 µV	455 µV	422 µV	422 µV	347 µV
50 mV/div	1.26 mV	1.14 mV	962 µV	982 µV	869 µV	1.03 mV	898 µV	1.00 mV	869 µV
100 mV/div	2.85 mV	2.50 mV	2.08 mV	2.09 mV	1.74 mV	2.18 mV	1.91 mV	2.06 mV	1.74 mV
1 V/div	24.6 mV	22.4 mV	18.9 mV	19.4 mV	17.4 mV	23.1 mV	21.1 mV	21.6 mV	17.4 mV

1 GHz, 500 MHz, 350 MHz models, Sample mode (RMS), typical

< 2 GHz models	50 Ω					1 MΩ			
V/div	1 GHz	500 MHz	350 MHz	250 MHz	20 MHz	500 MHz	350 MHz	250 MHz	20 MHz
1 mV/div	287 μV	196 μV	140 μV	118 μV	70.6 μV	199 μV	145 μV	122 μV	67.9 μV
2 mV/div	290 μV	202 μV	147 μV	127 μV	78.9 μV	196 μV	149 μV	122 μV	71.1 μV
5 mV/div	305 μV	226 μV	171 μV	156 μV	105 μV	210 μV	160 μV	143 μV	89.8 μV
10 mV/div	347 μV	277 μV	219 μV	210 μV	153 μV	246 μV	204 μV	194 μV	146 μV
20 mV/div	475 μV	409 μV	337 μV	336 μV	257 μV	352 μV	326 μV	326 μV	251 μV
50 mV/div	977 μV	883 μV	743 μV	758 μV	627 μV	796 μV	694 μV	775 μV	627 μV
100 mV/div	2.20 mV	1.93 mV	1.60 mV	1.61 mV	1.25 mV	1.68 mV	1.48 mV	1.59 mV	1.25 mV
1 V/div	19.0 mV	17.3 mV	14.6 mV	15.0 mV	12.5 mV	17.9 mV	16.3 mV	16.7 mV	12.5 mV

✓1 GHz, 500 MHz, 350 MHz models, High Res mode (RMS)

< 2 GHz models	50 Ω					1 MΩ			
V/div	1 GHz	500 MHz	350 MHz	250 MHz	20 MHz	500 MHz	350 MHz	250 MHz	250 MHz
1 mV/div	329 μV	256 μV	183 μV	152 μV	90.6 μV	245 μV	184 μV	153 μV	83.8 μV
2 mV/div	330 μV	256 μV	185 μV	157 μV	91.2 μV	251 μV	188 μV	156 μV	85.4 μV
5 mV/div	339 μV	262 μV	195 μV	172 μV	94.3 μV	254 μV	197 μV	169 μV	90.1 μV
10 mV/div	367 μV	282 μV	218 μV	205 μV	103 μV	274 μV	216 μV	200 μV	101 μV
20 mV/div	462 μV	354 μV	287 μV	288 μV	132 μV	348 μV	277 μV	289 μV	135 μV
50 mV/div	876 μV	667 μV	564 μV	595 μV	254 μV	634 μV	530 μV	621 μV	268 μV
100 mV/div	2.09 mV	1.60 mV	1.31 mV	1.34 mV	601 μV	1.51 mV	1.25 mV	1.36 mV	615 μV
1 V/div	16.8 mV	12.8 mV	10.9 mV	11.6 mV	4.88 mV	17.6 mV	13.7 mV	14.4 mV	7.08 mV

1 GHz, 500 MHz, 350 MHz models, High Res mode (RMS), typical

< 2 GHz models	50 Ω					1 MΩ			
V/div	1 GHz	500 MHz	350 MHz	250 MHz	20 MHz	500 MHz	350 MHz	250 MHz	200 MHz
1 mV/div	254 μV	198 μV	141 μV	118 μV	70.0 μV	189 μV	143 μV	118 μV	64.8 μV
2 mV/div	255 μV	198 μV	143 μV	121 μV	70.4 μV	194 μV	145 μV	121 μV	66.0 μV
5 mV/div	262 μV	202 μV	150 μV	133 μV	72.8 μV	196 μV	152 μV	130 μV	69.6 μV
10 mV/div	283 μV	218 μV	169 μV	158 μV	79.8 μV	212 μV	167 μV	154 μV	78.2 μV
20 mV/div	357 μV	273 μV	222 μV	223 μV	102 μV	269 μV	214 μV	223 μV	104 μV
50 mV/div	677 μV	516 μV	436 μV	460 μV	196 μV	490 μV	410 μV	480 μV	207 μV
100 mV/div	1.61 mV	1.23 mV	1.02 mV	1.04 mV	464 μV	1.16 mV	964 μV	1.05 mV	475 μV
1 V/div	13.0 mV	9.88 mV	8.41 mV	8.94 mV	3.77 mV	13.6 mV	10.6 mV	11.1 mV	5.47 mV

Delay between analog channels, full bandwidth, typical	≤ 100 ps for any two channels with input impedance set to 50 Ω, DC coupling with equal Volts/div or above 10 mV/div
Deskew range	-125 ns to +125 ns with a resolution of 40 ps
Crosstalk (channel isolation), typical	≥ 200:1 at ≤ 100 MHz and ≥ 100:1 at > 100 MHz, up to the rated bandwidth for any two channels having equal Volts/div settings

Overdrive recovery time, typical

50 Ω, no probe, 1 GHz bandwidth

Vertical scale	500% overdrive			5000% overdrive		
	5%	1%	0.2%	5%	1%	0.2%
1 mV/div	<1 µs	2.0 ms	2.0 ms	---	---	---
10 mV/div	<1 µs	3.0 ms	33 µs	<1.2 µs	<4.7 µs	---
100 mV/div	<1 µs	<1 µs	5.8 µs	---		---

50 Ω, no probe, 2 GHz bandwidth

Vertical scale	500% overdrive			5000% overdrive		
	5%	1%	0.2%	5%	1%	0.2%
1 mV/div	<1 µs	110 µs	2.0 ms	---	---	---
10 mV/div	<1 µs	<1 µs	2.0 ms	<1 µs	<1 µs	---
100 mV/div	<1 µs	<1 µs	2.3 ms	---		---

TPP1000 Probe

Vertical scale	500% overdrive			5000% overdrive		
	5%	1%	0.2%	5%	1%	0.2%
10 mV/div	20 µs	2.0 ms	2.0 ms	30 µs	50 µs	2.2 ms
20 mV/div	14 µs	2.0 ms	2.0 ms	30 µs	50 µs	110 µs
50 mV/div	12 µs	60 µs	2.0 ms	---	---	---
100 mV/div	12 µs	60 µs	2.0 ms	---	---	---

Total probe power

TekVPI Compliant probe interfaces (8 per MSO58, 6 per MSO56, 4 per MSO54)

MSO58 and MSO56: 80 W maximum, (40 W maximum for channels 1 through 4, 40 W maximum for channels 5 through 8)

MDO54: 40 W maximum

Probe power per channel

Voltage	Max Amperage	Voltage Tolerance
5 V	60 mA (300 mW)	±10%
12 V	2 A (20 W)	±10%

TekVPI interconnect

All analog channel inputs on the front panel conform to the TEKVPI specification.

Timebase system

Sample rate

Max HW Capability	Number of Channels
6.25 GS/s	1-8

Interpolated waveform rate range

500 GS/sec, 250 GS/sec, 125 GS/sec, 62.5 GS/sec, 25 GS/sec, and 12.5 GS/sec

Record length range

Standard — 1 kpoints to 62.5 Mpoints in single sample increments

Option 5-RL-125M — 125 Mpoints

Seconds/Division range

Model	1 K	10 K	100 K	1 M	10 M	62.5 M	125 M
MSO5X Standard 62.5 M	200 ps - 64 s	200 ps - 640 s	200 ps - 1000 s				
MSO5X Option 5-RL-125M	200 ps - 64 s	200 ps - 640 s	200 ps - 1000 s				

Maximum triggered acquisition rate, typical

Analog or digital channels: single channel [Analog or Digital 8-bit channel] on screen, measurements and math turned off. >40 wfm/sec

FastAcq Update Rate (analog only): >500 K/second with one channel active and >100 K/second with all eight active.

FastAcq Update Rate (analog and analog/digital): >400 K/second with two channels active and >100 K/second with all eight analog channels active.

Digital channel: >40/second with one channel (8-bits)active. There is no FastAcq for digital channels, but they do not slow down FastAcq for active analog channels.

Aperture uncertainty

≤ 0.450 ps + $(1 * 10^{-11} * \text{Measurement Duration})_{RMS}$, for measurements having duration ≤ 100 ms

✓Timebase accuracy

$\pm 2.5 \times 10^{-6}$ over any ≥1 ms time interval

Description	Specification
Factory Tolerance	$\pm 5.0 \times 10^{-7}$. At calibration, 25 °C ambient, over any ≥1 ms interval
Temperature stability	$\pm 5.0 \times 10^{-7}$. Tested at operating temperatures
Crystal aging, typical	$\pm 1.5 \times 10^{-6}$. Frequency tolerance change at 25 °C over a period of 1 year

✓Delta-time measurement accuracy

The formula to calculate delta-time measurement accuracy (DTA) for a given instrument setting and input signal assumes insignificant signal content above Nyquist frequency

SR_1 = Slew Rate (1st Edge) around 1st point in measurement

SR_2 = Slew Rate (2nd Edge) around 2nd point in measurement

N = input-referred guaranteed noise limit (volts rms)

TBA = timebase accuracy or Reference Frequency Error

t_p = delta-time measurement duration (sec)

$$DTA_{pp}(typical) = 10 \times \sqrt{\left(\frac{N}{SR_1}\right)^2 + \left(\frac{N}{SR_2}\right)^2 + \left(0.450\ ps + \left(1 \times 10^{-11} \times t_p\right)\right)^2} + TBA \times t_p$$

(assume edge shape that results from Gaussian filter response)

$$DTA_{RMS} = \sqrt{\left(\frac{N}{SR_1}\right)^2 + \left(\frac{N}{SR_2}\right)^2 + \left(0.450\ ps + \left(1 \times 10^{-11} \times t_p\right)\right)^2} + TBA \times t_p$$

The term under the square root sign is the stability and is due to TIE (Time Interval Error). The errors due to this term occur throughout a single-shot measurement. The second term is due to both the absolute center-frequency accuracy and the center-frequency stability of the timebase and varies between multiple single-shot measurements over the observation interval (the amount of time from the first single-shot measurement to the final single-shot measurement).

NOTE. *The formulas assume negligible errors due to measurement interpolation, and apply only when the interpolated sample rate is 25 GS/s or higher.*

Trigger system

Trigger bandwidth edge, pulse and logic, typical

2 GHz models, Edge	2 GHz
2 GHz models, Pulse and Logic	1 GHz
1 GHz models	1 GHz
500 MHz models	500 MHz
350 MHz models	350 MHz

Edge-type trigger sensitivity, DC coupled, typical

1 MΩ path (all models)	0.5 mV/div to 0.99 mV/div	4.5 div from DC to instrument bandwidth
	≥ 1 mV/div	The greater of 5 mV or 0.7 div from DC to lesser of 500 MHz or instrument BW, & 6 mV or 0.8 div from > 500 MHz to instrument bandwidth
50 Ω path, 1 GHz, 500 MHz, 350 MHz models		The greater of 5.6 mV or 0.7 div from DC to the lesser of 500 MHz or instrument BW, & 7 mV or 0.8 div from > 500 MHz to instrument bandwidth

50 Ω path, 2 GHz model	0.5 mV/div to 0.99 mV/div	3.0 div from DC to instrument bandwidth
	1 mV/div to 9.98 mV/div	1.5 divisions from DC to instrument bandwidth
	≥ 10 mV/div	< 1.0 division from DC to instrument bandwidth
Line		Fixed

Trigger jitter, typical

≤ 5 ps_{RMS} for sample mode and edge-type trigger

≤ 7 ps_{RMS} for edge-type trigger and FastAcq mode

≤ 40 ps_{RMS} for non edge-type trigger modes

Edge-type trigger sensitivity, not DC coupled, typical

Trigger Coupling	Typical Sensitivity
NOISE REJ	2.5 times the DC Coupled limits
HF REJ	1.0 times the DC Coupled limits from DC to 50 kHz. Attenuates signals above 50 kHz.
LF REJ	1.5 times the DC Coupled limits for frequencies above 50 kHz. Attenuates signals below 50 kHz.

Lowest frequency for successful operation of Set Level to 50% function, typical

45 Hz

Logic-type, logic qualified trigger, or events-delay sensitivities, DC coupled, typical

2.0 divisions, at vertical settings ≥5 mV/div.

Pulse-type runt trigger sensitivities, typical

2.0 division at vertical settings ≥5 mV/div.

Pulse-type trigger width and glitch sensitivities, typical

2.0 divisions at vertical settings ≥5 mV/div.

Logic-type triggering, minimum logic or rearm time, typical

Triggering type	Pulse width	Rearm time	Time skew needed for 100% and no triggering [1]
Logic	160 ps + t_{rise}	160 ps + t_{rise}	>360 ps / <150 ps
Time qualified logic	320 ps + t_{rise}	320 ps + t_{rise}	>360 ps / <150 ps

t_{rise} is rise time of the instrument.

[1] For Logic, time between channels refers to the length of time a logic state derived from more than one channel must exist to be recognized. For Events, the time is the minimum time between a main and delayed event that will be recognized if more than one channel is used.

Minimum clock pulse widths for setup/hold time violation trigger, typical

Minimum pulsewidth, clock active [2]	Minimum pulsewidth, clock inactive [3]
320 ps + t_{rise}	320 ps +t_{rise}

t_{rise} is rise time of the instrument.

Setup/hold violation trigger, setup and hold time ranges, typical

Feature	Min	Max
Setup Time	0 ns	20 s
Hold Time	0 ns	20 s
Setup + Hold Time	320 ps	22 s

Input coupling on clock and data channels must be the same.

For Setup Time, positive numbers mean a data transition before the clock.

For Hold Time, positive numbers mean a data transition after the clock edge.

Setup + Hold Time is the algebraic sum of the Setup Time and the Hold Time programmed by the user.

Pulse type trigger, minimum pulse, rearm time, transition time

Pulse class	Minimum pulse width	Minimum rearm time
Runt	160 ps + t_{rise}	160 ps + t_{rise}
Time-Qualified Runt	160 ps + t_{rise}	160 ps + t_{rise}
Width	160 ps + t_{rise}	160 ps + t_{rise}
Slew Rate (minimum transition time)	160 ps + t_{rise}	160 ps + t_{rise}

For trigger class runt, pulse width refers to the width of the pulse being measured. Rearm time refers to the time between pulses.

For trigger class width, pulse width refers to the width of the pulse being measured. Rearm time refers to the time between pulses.

For trigger class slew rate, pulse width refers to the delta time being measured. Rearm time refers to the time it takes the signal to cross the two trigger thresholds again.

t_{rise} is rise time of the instrument.

Active pulsewidth is the width of the clock pulse from its active edge (as defined in the Clock Edge menu item) to its inactive edge

Inactive pulsewidth is the width of the pulse from its inactive edge to its active edge.

Transition time trigger, delta time range

160 ps to 20 s.

Time range for glitch, pulse width, timeout, time-qualified runt, or time-qualified window triggering

160 ps to 20 s.

2 Active pulsewidth is the width of the clock pulse from its active edge (as defined in the Clock Edge menu item) to its inactive edge.
3 Inactive pulsewidth is the width of the pulse from its inactive edge to its active edge.

Time accuracy for pulse, glitch, timeout, or width triggering

Time Range	Accuracy
1 ns to 500 ns	±(160 ps +Time Base Error * Setting).
520 ns to 1 s	±(160 ps +Time Base Error * Setting).

B trigger after events, minimum pulse width and maximum event frequency, typical

Minimum pulse width: 160 ps + t_{rise}

Maximum event frequency: Instrument bandwidth.

t_{rise} is rise time of the instrument.

B trigger, minimum time between arm and trigger, typical

320 ps

For trigger after time, this is the time between the end of the time period and the B trigger event.

For trigger after events, this is the time between the last A trigger event and the first B trigger event.

B trigger after time, time range

160 ps to 20 seconds

B trigger after events, event range

1 to 65,471

Trigger level ranges

Source	Range
Any Input Channel	±5 divs from center of screen
Line	N/A

Line trigger level is fixed at about 50% of the line voltage.

This specification applies to logic and pulse thresholds.

Trigger level accuracy, DC coupled, typical

For signals having rise and fall times ≥10 ns:

Source	Range
Any Input Channel	±0.20 div
Line	N/A

Trigger holdoff range

0 ns to 20 seconds

Serial Trigger specifications

Maximum serial trigger bits	128 bits
Optional serial bus interface triggering	
I^2C	**Address Triggering:** 7 & 10 bits of user-specified addresses supported **Data Trigger:** 1 - 5 Bytes of user-specified data **Trigger on:** Start, Repeated Start, Stop, Missing Ack, Data, Address, or Address & Data **Maximum Data Rate:** 10 Mb/s
SPI	**Data Trigger:** 1 - 16 Bytes of user-specified data **Trigger on:** SS Active, Data **Maximum Data Rate:** 20 Mb/s
CAN	**Data Trigger:** 1 - 8 Bytes of user-specified data, including qualifiers of equal to (=), not equal to ≠, less than (<), greater than (>), less than or equal to (<=), greater than or equal to (>=) **Trigger on:** Start of Frame, Type of Frame, Identifier, Data, Identifier & Data, End of Frame, Missing Ack, or Bit Stuffing Errors **Frame Type:** Data, Remote, Error, Overload **Identifier:** Standard (11 bit) and Extended (29 bit) identifiers **Maximum Data Rate:** 1 Mb/s
LIN	**Identifier Trigger:** 6 bits of user-specified data, equal to (=) **Data Trigger**: 1 - 8 Bytes of user-specified data, including qualifiers of equal to (=), not equal to ≠, less than (<), greater than (>), less than or equal to (<=), greater than or equal to (>=), inside range, outside range **Error Trigger:** Sync, Identifier Parity, Checksum **Trigger on:** Sync, Identifier, Data, Identifier & Data, Wakeup Frame, Sleep Frame, or Error **Maximum Data Rate:** 100 kb/s

Flexray

Indicator Bits: Normal (01XX), Payload (11XX), Null (00XX), Sync (XX10), Startup (XX11)

Frame ID Trigger: 11 bits of user-specified data, including qualifiers of equal to (=), not equal to (≠), less than (<), greater than (>), less than or equal to (<=), greater than or equal to (>=)

Cycle Count Trigger: 6 bits of user-specified data , including qualifiers of equal to (=), not equal to (≠), less than (<), greater than (>), less than or equal to (<=), greater than or equal to (>=)

Header Fields Trigger: 40 bits of user-specified data comprising Indicator Bits, Identifier, Payload Length, Header CRC, and Cycle Count, equal to (=)

Data Trigger: 1 - 16 Bytes of user-specified data, with 0 to 253, or "don't care" bytes of data offset, including qualifiers of equal to (=), not equal to (≠), less than (<), greater than (>), less than or equal to (<=), greater than or equal to (>=), Inside Range, Outside Range

End Of Frame: User-chosen types Static, Dynamic (DTS), and All

Error Trigger: Header CRC, Trailer CRC, Null Frame-static, Null Frame-dynamic, Sync Frame, Startup frame (No Sync)

Trigger on: Start of Frame, Type of Frame, Indicator Bits, Identifier, Cycle Count, Header Fields, Data, Identifier & Data, End of Frame, or Error

Maximum Data Rate: 40 Mb/s

Audio

I^{2}S

Data Trigger: 32 bits of user-specified data in a left word, right word, or either, including qualifiers of equal to (=), not equal to (≠), less than (<), greater than (>), less than or equal to (<=), greater than or equal to (>=), inside range, outside range

Trigger on: Word Select, Data

Maximum Data Rate: 12.5 Mb/s

Left Justified (LJ)

Data Trigger: 32 bits of user-specified data in a left word, right word, or either, including qualifiers of equal to (=), not equal to (≠), less than (<), greater than (>), less than or equal to (<=), greater than or equal to (>=), inside range, outside range

Trigger on: Word Select, Data

Maximum Data Rate: 12.5 Mb/s

Right Justified (RJ)

Data Trigger: 32 bits of user-specified data in a left word, right word, or either, including qualifiers of equal to (=), not equal to (≠), less than (<), greater than (>), less than or equal to (<=), greater than or equal to (>=), inside range, outside range

Trigger on: Word Select, Data

Maximum Data Rate: 12.5 Mb/s

TDM

Data Trigger: 32 bits of user-specified data in a channel 0-7, including qualifiers of equal to (=), not equal to (≠), less than (<), greater than (>), less than or equal to (<=), greater than or equal to (>=), inside range, outside range

Trigger on: Frame Sync, Data

Maximum Data Rate: 25 Mb/s

RS232	**Bit Rate:** 50 bps - 10 Mbps **Data Bits:** 7, 8, or 9 **Parity:** None, Odd, or Even **Trigger on:** Start, End of Packet, Data, Parity Error
USB	**Data Rates Supported:** High: 480 Mbs, Full: 12 Mbs, Low: 1.5Mbs **Trigger On:** Sync, Reset, Suspend, Resume, End of Packet, Token Packet, Data Packet, Handshake Packet, Special Packet, Error
Ethernet	**Bit Rate:** 10 BASE-T, 10 Mbps; 100 BASE-TX, 100 Mbps **Trigger On:** Start of Frame, MAC Address, MAC Length/Type, IP Header, TCP Header, Client Data, End of Packet, Idle, FCS (CRC) Error, MAC Q-Tag control Information

Digital acquisition system

Digital channel maximum sample rate	6.25 GS/s
Transition detect (digital peak detect)	Displayed data at sample rates less than 6.25 GS/s (decimated data), that contains multiple transitions between sample points will be displayed with a bright white colored edge.
Digital-To-Analog trigger skew	1 ns
Digital to digital skew	320 ps from bit 0 of any TekVPI channel to bit 0 of any TekVPI channel.
Digital skew within a FlexChannel	160 ps within any TekVPI channel

Digital volt meter (DVM)

Measurement types	DC, AC_{RMS}+DC, AC_{RMS}
Voltage resolution	4 digits
✓Voltage accuracy	
DC:	±(1.5% * |reading - offset - position|) + (0.5% * |(offset - position)|) + (0.1 * Volts/div)) De-rated at 0.100%/°C of |reading - offset - position| above 30 °C Signal ± 5 divisions from screen center
AC:	± 2% (40 Hz to 1 kHz) with no harmonic content outside 40 Hz to 1 kHz range AC, typical: ± 2% (20 Hz to 10 kHz) For AC measurements, the input channel vertical settings must allow the V_{PP} input signal to cover between 4 and 10 divisions and must be fully visible on the screen

Trigger frequency counter

✓Accuracy	±(1 count + time base error * input frequency) The signal must be at least 8 mV_{pp} or 2 div, whichever is greater.
✓Maximum input frequency	Maximum bandwidth of the analog channel The signal must be at least 8 mV_{pp} or 2 div, whichever is greater.
Resolution	8-digits

Arbitrary Function Generator system

Function types

Arbitrary, sine, square, pulse, ramp, triangle, DC level, Gaussian, Lorentz, exponential rise/fall, sin(x)/x, random noise, Haversine, Cardiac

Amplitude range

Values are peak-to-peak voltages

Waveform	50 Ω	1 MΩ
Arbitrary	10 mV to 2.5 V	20 mV to 5 V
Sine	10 mV to 2.5 V	20 mV to 5 V
Square	10 mV to 2.5 V	20 mV to 5 V
Pulse	10 mV to 2.5 V	20 mV to 5 V
Ramp	10 mV to 2.5 V	20 mV to 5 V
Triangle	10 mV to 2.5 V	20 mV to 5 V
Gaussian	10 mV to 1.25 V	20 mV to 2.5 V
Lorentz	10 mV to 1.2 V	20 mV to 2.4 V
Exponential Rise	10 mV to 1.25 V	20 mV to 2.5 V
Exponential Fall	10 mV to 1.25 V	20 mV to 2.5 V
Sine(x)/x	10 mV to 1.5 V	20 mV to 3.0 V
Random Noise	10 mV to 2.5 V	20 mV to 5 V
Haversine	10 mV to 1.25 V	20 mV to 2.5 V
Cardiac	10 mV to 2.5 V	20 mV to 5 V

Maximum sample rate

250 MS/s

Arbitrary function record length

128 K Samples

Sine waveform

Frequency range 0.1 Hz to 50 MHz

Frequency setting resolution 0.1 Hz

Amplitude flatness, typical ±0.5 dB at 1 kHz

±1.5 dB at 1 kHz for < 20 mV_{pp} amplitudes

Total harmonic distortion, typical 1% for amplitude ≥ 200 mV_{pp} into 50 Ω load

2.5% for amplitude > 50 mV AND < 200 mV_{pp} into 50 Ω load

Spurious free dynamic range, typical 40 dB (V_{pp} ≥ 0.1 V); 30 dB (V_{pp} ≥ 0.02 V), 50 Ω load

Square and pulse waveform

Frequency range 0.1 Hz to 25 MHz

Frequency setting resolution 0.1 Hz

Duty cycle range 10% - 90% or 10 ns minimum pulse, whichever is larger

Minimum pulse time applies to both on and off time, so maximum duty cycle will reduce at higher frequencies to maintain 10 ns off time

Duty cycle resolution	0.1%
Minimum pulse width, typical	10 ns. This is the minimum time for either on or off duration.
Rise/Fall time, typical	5 ns, 10% - 90%
Pulse width resolution	100 ps
Overshoot, typical	< 6% for signal steps greater than 100 mV_{pp} This applies to overshoot of the positive-going transition (+overshoot) and of the negative-going (-overshoot) transition
Asymmetry, typical	±1% ±5 ns, at 50% duty cycle
Jitter, typical	< 60 ps TIE_{RMS}, ≥ 100 mV_{pp} amplitude, 40%-60% duty cycle
Ramp and triangle waveform	
Frequency range	0.1 Hz to 500 kHz
Frequency setting resolution	0.1 Hz
Variable symmetry	0% - 100%
Symmetry resolution	0.1%
DC level range	±2.5 V into Hi-Z ±1.25 V into 50 Ω
Gaussian pulse, Haversine, and Lorentz pulse	
Maximum frequency	5 MHz
Exponential rise fall maximum frequency	5 MHz
Sin(x)/x	
Maximum frequency	2 MHz
Random noise amplitude range	20 mV_{pp} to 5 V_{pp} into Hi-Z 10 mV_{pp} to 2.5 V_{pp} into 50 Ω For both isolated noise signal and additive noise signal.
✓Sine and ramp frequency accuracy	1.3×10^{-4} (frequency ≤10 kHz) 5.0×10^{-5} (frequency >10 kHz)
✓Square and pulse frequency accuracy	1.3×10^{-4} (frequency ≤10 KHz); 5.0×10^{-5} (frequency >10 KHz)
Signal amplitude resolution	1 mV (Hi-Z) 500 µV (50 Ω)
✓Signal amplitude accuracy	±[(1.5% of peak-to-peak amplitude setting) + (1.5% of absolute DC offset setting) + 1 mV] (frequency = 1 kHz)

DC offset range	±2.5 V into Hi-Z ±1.25 V into 50 Ω
DC offset resolution	1 mV (Hi-Z) 500 µV (50 Ω)
✓DC offset accuracy	±[(1.5% of absolute offset voltage setting) + 1 mV] Add 3 mV of uncertainty per 10 °C change from 25 °C ambient

Display system

Display type	Display area - 13.55 inches (344.16 mm) (H) x 7.62 inches (193.59 mm) (V), 15.55 inches (395 mm) diagonal, 6-bit RGB color, (1920 X 1080) TFT liquid crystal display (LCD).
Display resolution	1,920 horizontal × 1,080 vertical pixels (High Definition)
Luminance, typical	250 cd/m^2, (Minimum: 200 cd/m^2) Display luminance is specified for a new display set at full brightness.
Color support	262K (6-bit RGB) colors.

Processor system

Host processor	Intel i5-4400E, 2.7 GHz, 64-bit, dual core processor
RAM	16 GB of DDR3-1866 DRAM

Input/Output port specifications

Ethernet interface	An 8-pin RJ-45 connector that supports 10/100/1000 Mb/s
Video signal output	A 15-pin, 3-row, D-sub VGA connector. Recommended resolution: 1920 x 1080 @ 60Hz
DVI connector	A 29-pin DVI-I connector; connect to show the oscilloscope display on an external monitor or projector. Maximum supported resolution, Windows: 1920 x 1200 @ 60 Hz Maximum supported resolution, Linux: 1920 x 1080 @ 60 Hz Only a single TMDS link is provided Analog VGA signaling is not provided
DisplayPort connector	A 20-pin DisplayPort connector Maximum supported resolution, Windows: 2560 x 1440 @ 60Hz Maximum supported resolution, Linux: 1920 x 1080 @ 60 Hz DP++ adapter: Maximum supported resolution: 2560 x1440 @ 60 Hz
Simultaneous displays	Up to 3 displays (including the internal display) with a maximum of 1 display per port.
USB interface	Three USB Host ports on the front of the instrument: two USB 2.0 High Speed ports and one USB 3.0 Super Speed port Four USB Host ports on the rear of the instruments: two USB 2.0 High Speed ports and two USB 3.0 Super Speed ports One USB 3.0 Super Speed Device port on the rear of the instrument providing USBTMC support

Probe compensator output voltage and frequency, typical

Characteristic	Value
Output Voltage	Default: 0-2.5 V amplitude
Impedance	1 kΩ
Frequency	1 kHz

✓Auxiliary output, AUX OUT, Trigger Out, Event, or Reference Clock Out

Selectable output

Acquisition Trigger Out

Reference Clock Out

AFG Trigger Out

Acquisition Trigger Out

User selectable transition from HIGH to LOW, or LOW to HIGH, indicates the trigger occurred. The signal returns to its previous state after approximately 100 ns

Acquisition trigger jitter

300 ps (peak-to-peak)

Reference Clock Out

Reference clock output tracks the acquisition system and can be referenced from either the internal clock reference or the external clock reference

AFG Trigger Out

The output frequency is dependent on the frequency of the AFG signal as shown in the following table:

AFG signal frequency	AFT trigger frequency
≤ 4.9 MHz	Signal frequency
> 4.9 MHz to 14.7 MHz	Signal frequency / 3
> 14.7 MHz to 24.5 MHz	Signal frequency / 5
> 24.5 MHz to 34.3 MHz	Signal frequency / 7
> 34.3 MHz to 44.1 MHz	Signal frequency / 9
> 44.1 MHz to 50 MHz	Signal frequency / 11

AUX OUT Output Voltage

Characteristic	Limits
Vout (HI)	≥ 2.5 V open circuit; ≥ 1.0 V into a 50 Ω load to ground
Vout (LO)	≤ 0.7 V into a load of ≤ 4 mA; ≤0.25 V into a 50 Ω load to ground

External reference input

Nominal input frequency

10 MHz

Frequency Variation Tolerance

9.99996 MHz to 10.00004 MHz (±4.0 x 10^{-6})

Sensitivity, typical

V_{in} 1.5 V_{p-p} using a 50 Ω termination

Maximum input signal

7 V_{pp}

Impedance

1.2 K Ohms ±20% in parallel with 18 pf ±5 pf at 10 MHz

Data storage specifications

Nonvolatile memory retention time, typical	No time limit for front panel settings, saved waveforms, setups, product licensing, and calibration constants.
Real-time clock	A programmable clock providing time in years, months, days, hours, minutes, and seconds.
Nonvolatile memory capacity	
Instrument S/N	A 2 kbit EEPROM on the main board that stores the instrument serial number, instrument start up count, total uptime and administration passwords.
Companion CvP	A pair of 16 Mbit flash memory devices that stores a portion of the Companion FPGA image data. One device serves as a backup for the other device.
AFG S/N	A 2 kbit EEPROM on the AFG riser card that stores a copy of the instrument serial number which is used to validate the AFG calibration.
Front Panel ID	A 64 kbit EEPROM on the LED board that stores the USB vendor ID and device ID for the internal front panel controller.
BIOS	A 128 Mbit flash memory device that stores the firmware image and device configuration for the host processor and chipset sub-processors. This includes the Basic Input Output System (BIOS), Management Engine (ME), Embedded Controller (EC) and Network Interface Controller (NIC). The Ethernet MAC address is stored in this device.
CMOS Memory	The host processor chipset includes an integrated memory device, powered by the real-time clock (RTC) battery, which stores BIOS configuration settings. A customer accessible switch disconnects the RTC battery from the chipset which clears the contents of the integrated CMOS memory device.
Memory SPD	Each SODIMM (memory module) contains a serial presence detect (SPD) memory device implemented using an unspecified memory technology. Each SPD device contains the parameter data specific to its memory module. All SPD devices are treated by the instrument as read only. The size of a given SPD is unspecified. The 4 channel instrument includes 4 SPD devices. The 6 channel and 8 channel instruments include 6 SPD devices.
UCD9248	The instrument includes 3 UCD9248 power supply controllers. Each controller contains an *unspecified* quantity of nonvolatile memory that stores various power supply configuration settings.
PMU	A power management unit (PMU) microcontroller is used to manage instrument power supplies and hardware initialization. The PMU includes 32 KB of nonvolatile memory for storage of its own binary executable and redundant storage of UCD9248 device settings.
Analog Board Controller	A microcontroller is used to manage analog board operation. The PMU includes 64 KB of nonvolatile memory for storage of its own binary executable.
Carrier FPGA	The carrier FPGA stores its own configuration in its own internal 0.33 Mbit nonvolatile memory. The carrier FPGA implements simple "glue logic" for the instrument.
Mass storage device capacity	
Linux	≥80 GB. Form factor is an 80 mm m.2 card with a SATA-3 interface. Waveforms and setups are stored on a hard disk drive or solid state drive. Provides storage for saved customer data, all calibration constants and the Linux operating system. Not customer serviceable. Partition on the device, with a nominal capacity of 42 GB, is available for the storage of saved customer data.
Windows (optional):	≥ 480 GB. Form factor is a 2.5-inch SSD with a SATA-3 interface. This drive is customer installable and provides storage for the Windows operating system option.

Power supply system

Power	
Power consumption	400 Watts maximum
Source voltage	100 - 240 V ±10%
Source frequency	50 to 60 Hz ±10% at 100 - 240 V ±10% 400 Hz ±10% at 115 V ±10%
Fuse Rating	12.5 A, 250 V_{ac}

Safety characteristics

Safety certification	US NRTL Listed - UL61010-1. Canadian Certification - CAN/CSA-C22.2 No. 61010.1. EU Compliance - Low Voltage Directive 2014-35-EU and EN61010-1:. International Compliance - IEC 61010-1.
Pollution degree	Pollution degree 2, indoor, dry location use only

Environmental specifications

Temperature	
Operating	+0 °C to +50 °C (32 °F to 122 °F)
Non-operating	-20 °C to +60 °C (-4 °F to 140 °F)
Humidity	
Operating	5% to 90% relative humidity (% RH) at up to +40 °C 5% to 55% RH above +40 °C up to +50 °C, non-condensing, and as limited by a maximum wet-bulb temperature of +39 °C
Non-operating	5% to 90% relative humidity (% RH) at up to +40 °C 5% to 39% RH above +40 °C up to +50 °C, non-condensing, and as limited by a maximum wet-bulb temperature of +39 °C
Altitude	
Operating	Up to 3,000 meters (9,843 feet)
Non-operating	Up to 12,000 meters (39,370 feet)

Mechanical specifications

Weight	MSO54 1 GHz, 500 MHz, 350 MHz models: 22.7 lbs (10.3 kg) MSO54 2 GHz models: 23.6 lbs (10.7 kg) MSO56 1 GHz, 500 MHz, 350 MHz models: 23.5 lbs (10.7 kg) MSO56 2 GHz models: 24.3 lbs (11 kg) MSO58 1 GHz, 500 MHz, 350 MHz models: 23.8 lbs (10.8 kg) MSO58 2 GHz models: 24.7 lbs (11.2 kg) Front cover without pouch: 1.9 lbs (0.86 kg) Front cover with pouch: 3.1 lbs (1.4 kg)
Dimensions	Height: 12.2 in (309 mm), feet folded in, handle to back Height: 14.6 in (371 mm) feet folded in, handle up Width: 17.9 in (454 mm) from handle hub to handle hub Depth: 8.0 in (205 mm) from back of feet to front of knobs
Cooling	The clearance requirement for adequate cooling is 2.0 in (50.8 mm) on the right side (when looking at the front of the instrument) and on the rear of the instrument

Performance verification procedures

This chapter contains performance verification procedures for the specifications marked with the ✓ symbol. The following equipment, or a suitable equivalent, is required to complete these procedures.

Required equipment

Required equipment	Minimum requirements	Examples
DC voltage source	3 mV to 4 V, ±0.1% accuracy	Fluke 9500B Oscilloscope Calibrator with a 9530 Output Module
Leveled sine wave generator	50 kHz to 2 GHz, ±4% amplitude accuracy	
Time mark generator	80 ms period, ±1.0 x 10^{-6} accuracy, rise time <50 ns	
Logic probe	Low capacitance digital probe, 8 channels.	TLP058 probe
BNC-to-0.1 inch pin adapter to connect the logic probe to the signal source.	BNC-to-0.1 inch pin adapter; female BNC to 2x16 .01 inch pin headers.	Tektronix adapter part number 878-1429-00; to connect the Fluke 9500B to the TLP058 probe.
Digital multimeter (DMM)	0.1% accuracy or better	Tektronix DMM4020
One 50 Ω terminator	Impedance 50 Ω; connectors: female BNC input, male BNC output	Tektronix part number 011-0049-02
One 50 Ω BNC cable	Male-to-male connectors	Tektronix part number 012-0057-01
Optical mouse	USB, PS2	Tektronix part number 119-7054-00
RF vector signal generator	Maximum bandwidth of instrument	Tektronix TSG4100A

You might need additional cables and adapters, depending on the actual test equipment you use.

These procedures cover all MSO58, MSO56, and MSO54 models. Disregard checks that do not apply to the specific model you are testing.

Print the test record on the following pages and use it to record the performance test results for your oscilloscope.

NOTE. *Completion of the performance verification procedure does not update the stored time and date of the latest successful adjustment. The date and time are updated only when the adjustment procedures in the service manual are successfully completed.*

The performance verification procedures verify the performance of your instrument. They do not adjust your instrument. If your instrument fails any of the performance verification tests, you should return the instrument to Tektronix for adjustment or repair.

Test Records

Instrument information, self test record

Model	Serial #	Procedure performed by	Date

Test	Passed	Failed
Self Test		

Input Impedance test record

Input Impedance				
Performance checks	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 1 Input Impedance, 1 MΩ	100 mV/div	990 kΩ		1.01 MΩ
Channel 1 Input Impedance, 50 Ω	10 mV/div	49.5 Ω		50.5 Ω
	100 mV/div	49.5 Ω		50.5 Ω
Channel 2 Input Impedance, 1 MΩ	100 mV/div	990 kΩ		1.01 MΩ
Channel 2 Input Impedance, 50 Ω	10 mV/div	49.5 Ω		50.5 Ω
	100 mV/div	49.5 Ω		50.5 Ω
Channel 3 Input Impedance, 1 MΩ	100 mV/div	990 kΩ		1.01 MΩ
Channel 3 Input Impedance, 50 Ω	10 mV/div	49.5 Ω		50.5 Ω
	100 mV/div	49.5 Ω		50.5 Ω
Channel 4 Input Impedance, 1 MΩ	100 mV/div	990 kΩ		1.01 MΩ
Channel 4, Input Impedance, 50 Ω	10 mV/div	49.5 Ω		50.5 Ω
	100 mV/div	49.5 Ω		50.5 Ω
MSO56 and MSO58 models				
Channel 5 Input Impedance, 1 MΩ	100 mV/div	990 kΩ		1.01 MΩ
Channel 5 Input Impedance, 50 Ω	10 mV/div	49.5 Ω		50.5 Ω
	100 mV/div	49.5 Ω		50.5 Ω
Channel 6 Input Impedance, 1 MΩ	100 mV/div	990 kΩ		1.01 MΩ
Channel 6 Input Impedance, 50 Ω	10 mV/div	49.5 Ω		50.5 Ω
	100 mV/div	49.5 Ω		50.5 Ω
MSO58 models				
Channel 7 Input Impedance, 1 MΩ	100 mV/div	990 kΩ		1.01 MΩ
Channel 7 Input Impedance, 50 Ω	10 mV/div	49.5 Ω		50.5 Ω
	100 mV/div	49.5 Ω		50.5 Ω
Channel 8 Input Impedance, 1 MΩ	100 mV/div	990 kΩ		1.01 MΩ
Channel 8, Input Impedance, 50 Ω	10 mV/div	49.5 Ω		50.5 Ω
	100 mV/div	49.5 Ω		50.5 Ω

DC Balance test record

DC Balance				
Performance checks	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 1 DC Balance, 50 Ω, 20 MHz BW	1 mV/div	-0.2 mV		0.2 mV
	2 mV/div	-0.2 mV		0.2 mV
	5 mV/div	-0.5 mV		0.5 mV
	10 mV/div	-1 mV		1 mV
	20 mV/div	-2 mV		2 mV
	49.8 mV/div	-4.98 mV		4.98 mV
	50 mV/div	-5 mV		5 mV
	100 mV/div	-10 mV		10 mV
	200 mV/div	-20 mV		20 mV
	500 mV/div	-50 mV		50 mV
	1 V/div	-100 mV		100 mV
Channel 1 DC Balance, 1 MΩ, 20 MHz BW	1 mV/div	-0.2 mV		0.2 mV
	2 mV/div	-0.4 mV		0.4 mV
	5 mV/div	-1 mV		1 mV
	10 mV/div	-2 mV		2 mV
	20 mV/div	-4 mV		4 mV
	100 mV/div	-20 mV		20 mV
	500 mV/div	-100 mV		100 mV
	1 V/div	-200 mV		200 mV
	10 V/div	-2 V		2 V
Channel 1 DC Balance, 50 Ω, 250 MHz BW	20 mV/div	-2 mV		2 mV
Channel 1 DC Balance, 1 MΩ, 250 MHz BW	20 mV/div	-4 mV		4 mV
Channel 1 DC Balance, 50 Ω, Full BW	20 mV/div	-2 mV		2 mV
Channel 1 DC Balance, 1 MΩ, Full BW	20 mV/div	-4 mV		4 mV

DC Balance				
Performance checks	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 2 DC Balance, 50 Ω, 20 MHz BW	1 mV/div	-0.2 mV		0.2 mV
	2 mV/div	-0.2 mV		0.2 mV
	5 mV/div	-0.5 mV		0.5 mV
	10 mV/div	-1 mV		1 mV
	20 mV/div	-2 mV		2 mV
	49.8 mV/div	-4.98 mV		4.98 mV
	50 mV/div	-5 mV		5 mV
	100 mV/div	-10 mV		10 mV
	200 mV/div	-20 mV		20 mV
	500 mV/div	-50 mV		50 mV
	1 V/div	-100 mV		100 mV
Channel 2 DC Balance, 1 MΩ, 20 MHz BW	1 mV/div	-0.2 mV		0.2 mV
	2 mV/div	-0.4 mV		0.4 mV
	5 mV/div	-1 mV		1 mV
	10 mV/div	-2 mV		2 mV
	20 mV/div	-4 mV		4 mV
	100 mV/div	-20 mV		20 mV
	500 mV/div	-100 mV		100 mV
	1 V/div	-200 mV		200 mV
	10 V/div	-2 V		2 V
Channel 2 DC Balance, 50 Ω, 250 MHz BW	20 mV/div	-2 mV		2 mV
Channel 2 DC Balance, 1 MΩ, 250 MHz BW	20 mV/div	-4 mV		4 mV
Channel 2 DC Balance, 50 Ω, Full BW	20 mV/div	-2 mV		2 mV
Channel 2 DC Balance, 1 MΩ, Full BW	20 mV/div	-4 mV		4 mV

DC Balance				
Performance checks	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 3 DC Balance, 50 Ω, 20 MHz BW	1 mV/div	-0.2 mV		0.2 mV
	2 mV/div	-0.2 mV		0.2 mV
	5 mV/div	-0.5 mV		0.5 mV
	10 mV/div	-1 mV		1 mV
	20 mV/div	-2 mV		2 mV
	49.8 mV/div	-4.98 mV		4.98 mV
	50 mV/div	-5 mV		5 mV
	100 mV/div	-10 mV		10 mV
	200 mV/div	-20 mV		20 mV
	500 mV/div	-50 mV		50 mV
	1 V/div	-100 mV		100 mV
Channel 3 DC Balance, 1 MΩ, 20 MHz BW	1 mV/div	-0.2 mV		0.2 mV
	2 mV/div	-0.4 mV		0.4 mV
	5 mV/div	-1 mV		1 mV
	10 mV/div	-2 mV		2 mV
	20 mV/div	-4 mV		4 mV
	100 mV/div	-20 mV		20 mV
	500 mV/div	-100 mV		100 mV
	1 V/div	-200 mV		200 mV
	10 V/div	-2 V		2 V
Channel 3 DC Balance, 50 Ω, 250 MHz BW	20 mV/div	-2 mV		2 mV
Channel 3 DC Balance, 1 MΩ, 250 MHz BW	20 mV/div	-4 mV		4 mV
Channel 3 DC Balance, 50 Ω, Full BW	20 mV/div	-2 mV		2 mV
Channel 3 DC Balance, 1 MΩ, Full BW	20 mV/div	-4 mV		4 mV

DC Balance				
Performance checks	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 4 DC Balance, 50 Ω, 20 MHz BW	1 mV/div	-0.2 mV		0.2 mV
	2 mV/div	-0.2 mV		0.2 mV
	5 mV/div	-0.5 mV		0.5 mV
	10 mV/div	-1 mV		1 mV
	20 mV/div	-2 mV		2 mV
	49.8 mV/div	-4.98 mV		4.98 mV
	50 mV/div	-5 mV		5 mV
	100 mV/div	-10 mV		10 mV
	200 mV/div	-20 mV		20 mV
	500 mV/div	-50 mV		50 mV
	1 V/div	-100 mV		100 mV
Channel 4 DC Balance, 1 MΩ, 20 MHz BW	1 mV/div	-0.2 mV		0.2 mV
	2 mV/div	-0.4 mV		0.4 mV
	5 mV/div	-1 mV		1 mV
	10 mV/div	-2 mV		2 mV
	20 mV/div	-4 mV		4 mV
	100 mV/div	-20 mV		20 mV
	500 mV/div	-100 mV		100 mV
	1 V/div	-200 mV		200 mV
	10 V/div	-2 V		2 V
Channel 4 DC Balance, 50 Ω, 250 MHz BW	20 mV/div	-2 mV		2 mV
Channel 4 DC Balance, 1 MΩ, 250 MHz BW	20 mV/div	-4 mV		4 mV

DC Balance				
Performance checks	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 4 DC Balance, 50 Ω, Full BW	20 mV/div	-2 mV		2 mV
Channel 4 DC Balance, 1 MΩ, Full BW	20 mV/div	-4 mV		4 mV
MSO56 and MSO58 models				
Channel 5 DC Balance, 50 Ω, 20 MHz BW	1 mV/div	-0.2 mV		0.2 mV
	2 mV/div	-0.2 mV		0.2 mV
	5 mV/div	-0.5 mV		0.5 mV
	10 mV/div	-1 mV		1 mV
	20 mV/div	-2 mV		2 mV
	49.8 mV	-4.98 mV/div		4.98 mV
	50 mV/div	-5 mV		5 mV
	100 mV/div	-10 mV		10 mV
	200 mV/div	-20 mV		20 mV
	500 mV/div	-50 mV		50 mV
	1 V/div	-100 mV		100 mV
Channel 5 DC Balance, 1 MΩ, 20 MHz BW	1 mV/div	-0.2 mV		0.2 mV
	2 mV/div	-0.4 mV		0.4 mV
	5 mV/div	-1 mV		1 mV
	10 mV/div	-2 mV		2 mV
	20 mV/div	-4 mV		4 mV
	100 mV/div	-20 mV		20 mV
	500 mV/div	-100 mV		100 mV
	1 V/div	-200 mV		200 mV
	10 V/div	-2 V		2 V
Channel 5 DC Balance, 50 Ω, 250 MHz BW	20 mV/div	-2 mV		2 mV
Channel 5 DC Balance, 1 MΩ, 250 MHz BW	20 mV/div	-4 mV		4 mV
Channel 5 DC Balance, 50 Ω, Full BW	20 mV/div	-2 mV		2 mV
Channel 5 DC Balance, 1 MΩ, Full BW	20 mV/div	-4 mV		4 mV

DC Balance				
Performance checks	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 6 DC Balance, 50 Ω, 20 MHz BW	1 mV/div	-0.2 mV		0.2 mV
	2 mV/div	-0.2 mV		0.2 mV
	5 mV/div	-0.5 mV		0.5 mV
	10 mV/div	-1 mV		1 mV
	20 mV/div	-2 mV		2 mV
	49.8 mV/div	-4.98 mV		4.98 mV
	50 mV/div	-5 mV		5 mV
	100 mV/div	-10 mV		10 mV
	200 mV/div	-20 mV		20 mV
	500 mV/div	-50 mV		50 mV
	1 V/div	-100 mV		100 mV
Channel 6 DC Balance, 1 MΩ, 20 MHz BW	1 mV/div	-0.2 mV		0.2 mV
	2 mV/div	-0.4 mV		0.4 mV
	5 mV/div	-1 mV		1 mV
	10 mV/div	-2 mV		2 mV
	20 mV/div	-4 mV		4 mV
	100 mV/div	-20 mV		20 mV
	500 mV/div	-100 mV		100 mV
	1 V/div	-200 mV		200 mV
	10 V/div	-2 V		2 V
Channel 6 DC Balance, 50 Ω, 250 MHz BW	20 mV/div	-2 mV		2 mV
Channel 6 DC Balance, 1 MΩ, 250 MHz BW	20 mV/div	-4 mV		4 mV
Channel 6 DC Balance, 50 Ω, Full BW	20 mV/div	-2 mV		2 mV
Channel 6 DC Balance, 1 MΩ, Full BW	20 mV/div	-4 mV		4 mV
MSO58 models				

DC Balance				
Performance checks	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 7 DC Balance, 50 Ω, 20 MHz BW	1 mV/div	-0.2 mV		0.2 mV
	2 mV/div	-0.2 mV		0.2 mV
	5 mV/div	-0.5 mV		0.5 mV
	10 mV/div	-1 mV		1 mV
	20 mV/div	-2 mV		2 mV
	49.8 mV/div	-4.98 mV		4.98 mV
	50 mV/div	-5 mV		5 mV
	100 mV/div	-10 mV		10 mV
	200 mV/div	-20 mV		20 mV
	500 mV/div	-50 mV		50 mV
	1 V/div	-100 mV		100 mV
Channel 7 DC Balance, 1 MΩ, 20 MHz BW	1 mV/div	-0.2 mV		0.2 mV
	2 mV/div	-0.4 mV		0.4 mV
	5 mV/div	-1 mV		1 mV
	10 mV/div	-2 mV		2 mV
	20 mV/div	-4 mV		4 mV
	100 mV/div	-20 mV		20 mV
	500 mV/div	-100 mV		100 mV
	1 V/div	-200 mV		200 mV
	10 V/div	-2 V		2 V
Channel 7 DC Balance, 50 Ω, 250 MHz BW	20 mV/div	-2 mV		2 mV
Channel 7 DC Balance, 1 MΩ, 250 MHz BW	20 mV/div	-4 mV		4 mV
Channel 7 DC Balance, 50 Ω, Full BW	20 mV/div	-2 mV		2 mV
Channel 7 DC Balance, 1 MΩ, Full BW	20 mV/div	-4 mV		4 mV

DC Balance				
Performance checks	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 8 DC Balance, 50 Ω, 20 MHz BW	1 mV/div	-0.2 mV		0.2 mV
	2 mV/div	-0.2 mV		0.2 mV
	5 mV/div	-0.5 mV		0.5 mV
	10 mV/div	-1 mV		1 mV
	20 mV/div	-2 mV		2 mV
	49.8 mV/div	-4.98 mV		4.98 mV
	50 mV/div	-5 mV		5 mV
	100 mV/div	-10 mV		10 mV
	200 mV/div	-20 mV		20 mV
	500 mV/div	-50 mV		50 mV
	1 V/div	-100 mV		100 mV
Channel 8 DC Balance, 1 MΩ, 20 MHz BW	1 mV/div	-0.2 mV		0.2 mV
	2 mV/div	-0.4 mV		0.4 mV
	5 mV/div	-1 mV		1 mV
	10 mV/div	-2 mV		2 mV
	20 mV/div	-4 mV		4 mV
	100 mV/div	-20 mV		20 mV
	500 mV/div	-100 mV		100 mV
	1 V/div	-200 mV		200 mV
	10 V/div	-2 V		2 V
Channel 8 DC Balance, 50 Ω, 250 MHz BW	20 mV/div	-2 mV		2 mV
Channel 8 DC Balance, 1 MΩ, 250 MHz BW	20 mV/div	-4 mV		4 mV
Channel 8 DC Balance, 50 Ω, Full BW	20 mV/div	-2 mV		2 mV
Channel 8 DC Balance, 1 MΩ, Full BW	20 mV/div	-4 mV		4 mV

DC Gain Accuracy test record

DC Gain Accuracy, 2 GHz models					
Performance checks	**Bandwidth**	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 1 DC Gain Accuracy, 0 V offset, 0 V vertical position, 50 Ω	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1.2%		1.2%
		5 mV/div	-1.2%		1.2%
		10 mV/div	-1.2%		1.2%
		20 mV/div	-1.2%		1.2%
		50 mV/div	-1.2%		1.2%
		100 mV/div	-1.2%		1.2%
		200 mV/div	-1.2%		1.2%
		500 mV/div	-1.2%		1.2%
		1 V/div	-1.2%		1.2%
	250 MHz	20 mV/div	-1.2%		1.2%
	FULL	20 mV/div	-1.2%		1.2%
Channel 1 DC Gain Accuracy, 0 V offset, 0 V vertical position, 1 MΩ	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%
Channel 2 DC Gain Accuracy, 0 V offset, 0 V vertical position, 50 Ω	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1.2%		1.2%
		5 mV/div	-1.2%		1.2%
		10 mV/div	-1.2%		1.2%
		20 mV/div	-1.2%		1.2%
		50 mV/div	-1.2%		1.2%
		100 mV/div	-1.2%		1.2%
		200 mV/div	-1.2%		1.2%
		500 mV/div	-1.2%		1.2%
		1 V/div	-1.2%		1.2%
	250 MHz	20 mV/div	-1.2%		1.2%
	FULL	20 mV/div	-1.2%		1.2%

DC Gain Accuracy, 2 GHz models					
Performance checks	**Bandwidth**	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 2 DC Gain Accuracy, 0 V offset, 0 V vertical position, 1 MΩ	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%
Channel 3 DC Gain Accuracy, 0 V offset, 0 V vertical position, 50 Ω	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1.2%		1.2%
		5 mV/div	-1.2%		1.2%
		10 mV/div	-1.2%		1.2%
		20 mV/div	-1.2%		1.2%
		50 mV/div	-1.2%		1.2%
		100 mV/div	-1.2%		1.2%
		200 mV/div	-1.2%		1.2%
		500 mV/div	--1.2%		1.2%
		1 V/div	--1.2%		1.2%
	250 MHz	20 mV/div	-1.2%		1.2%
	FULL	20 mV/div	-1.2%		1.2%
Channel 3 DC Gain Accuracy, 0 V offset, 0 V vertical position, 1 MΩ	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%

DC Gain Accuracy, 2 GHz models					
Performance checks	**Bandwidth**	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 4 DC Gain Accuracy, 0 V offset, 0 V vertical position, 50 Ω	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1.2%		1.2%
		5 mV/div	-1.2%		1.2%
		10 mV/div	-1.2%		1.2%
		20 mV/div	-1.2%		1.2%
		50 mV/div	-1.2%		1.2%
		100 mV/div	-1.2%		1.2%
		200 mV/div	-1.2%		1.2%
		500 mV/div	-1.2%		1.2%
		1 V/div	-1.2%		1.2%
	250 MHz	20 mV/div	-1.2%		1.2%
	FULL	20 mV/div	-1.2%		1.2%
Channel 4 DC Gain Accuracy, 0 V offset, 0 V vertical position, 1 MΩ	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%
MSO56 and MSO58 models					
Channel 5 DC Gain Accuracy, 0 V offset, 0 V vertical position, 50 Ω	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1.2%		1.2%
		5 mV/div	-1.2%		1.2%
		10 mV/div	-1.2%		1.2%
		20 mV/div	-1.2%		1.2%
		50 mV/div	-1.2%		1.2%
		100 mV/div	-1.2%		1.2%
		200 mV/div	-1.2%		1.2%
		500 mV/div	-1.2%		1.2%
		1 V/div	-1.2%		1.2%
	250 MHz	20 mV/div	-1.2%		1.2%
	FULL	20 mV/div	-1.2%		1.2%

DC Gain Accuracy, 2 GHz models					
Performance checks	**Bandwidth**	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 5 DC Gain Accuracy, 0 V offset, 0 V vertical position, 1 MΩ	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%
Channel 6 DC Gain Accuracy, 0 V offset, 0 V vertical position, 50 Ω	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1.2%		1.2%
		5 mV/div	-1.2%		1.2%
		10 mV/div	-1.2%		1.2%
		20 mV/div	-1.2%		1.2%
		50 mV/div	-1.2%		1.2%
		100 mV/div	-1.2%		1.2%
		200 mV/div	-1.2%		1.2%
		500 mV/div	-1.2%		1.2%
		1 V/div	-1.2%		1.2%
	250 MHz	20 mV/div	-1.2%		1.2%
	FULL	20 mV/div	-1.2%		1.2%
Channel 6 DC Gain Accuracy, 0 V offset, 0 V vertical position, 1 MΩ	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%
MSO58 models					

DC Gain Accuracy, 2 GHz models					
Performance checks	**Bandwidth**	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 7 DC Gain Accuracy, 0 V offset, 0 V vertical position, 50 Ω	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1.2%		1.2%
		5 mV/div	-1.2%		1.2%
		10 mV/div	-1.2%		1.2%
		20 mV/div	-1.2%		1.2%
		50 mV/div	-1.2%		1.2%
		100 mV/div	-1.2%		1.2%
		200 mV/div	-1.2%		1.2%
		500 mV/div	-1.2%		1.2%
		1 V/div	-1.2%		1.2%
	250 MHz	20 mV/div	-1.2%		1.2%
	FULL	20 mV/div	-1.2%		1.2%
Channel 7 DC Gain Accuracy, 0 V offset, 0 V vertical position, 1 MΩ	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%
Channel 8 DC Gain Accuracy, 0 V offset, 0 V vertical position, 50 Ω	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1.2%		1.2%
		5 mV/div	-1.2%		1.2%
		10 mV/div	-1.2%		1.2%
		20 mV/div	-1.2%		1.2%
		50 mV/div	-1.2%		1.2%
		100 mV/div	-1.2%		1.2%
		200 mV/div	-1.2%		1.2%
		500 mV/div	-1.2%		1.2%
		1 V/div	-1.2%		1.2%
	250 MHz	20 mV/div	-1.2%		1.2%
	FULL	20 mV/div	-1.2%		1.2%

DC Gain Accuracy, 2 GHz models					
Performance checks	**Bandwidth**	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 8 DC Gain Accuracy, 0 V offset, 0 V vertical position, 1 MΩ	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%

DC Gain Accuracy, < 2 GHz models					
Performance checks	**Bandwidth**	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 1 DC Gain Accuracy, 0 V offset, 0 V vertical position, 50 Ω	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%

DC Gain Accuracy, < 2 GHz models					
Performance checks	Bandwidth	Vertical scale	Low limit	Test result	High limit
Channel 1 DC Gain Accuracy, 0 V offset, 0 V vertical position, 1 MΩ	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%
Channel 2 DC Gain Accuracy, 0 V offset, 0 V vertical position, 50 Ω	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%
Channel 2 DC Gain Accuracy, 0 V offset, 0 V vertical position, 1 MΩ	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%

DC Gain Accuracy, < 2 GHz models					
Performance checks	**Bandwidth**	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 3 DC Gain Accuracy, 0 V offset, 0 V vertical position, 50 Ω	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%
Channel 3 DC Gain Accuracy, 0 V offset, 0 V vertical position, 1 MΩ	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%
Channel 4 DC Gain Accuracy, 0 V offset, 0 V vertical position, 50 Ω	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%

DC Gain Accuracy, < 2 GHz models					
Performance checks	**Bandwidth**	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 4 DC Gain Accuracy, 0 V offset, 0 V vertical position, 1 MΩ	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%
MSO56 and MSO58 models					
Channel 5 DC Gain Accuracy, 0 V offset, 0 V vertical position, 50 Ω	20 MHz	1 mV/div	-2%		2%
		1 mV/div	-1%		1%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%

DC Gain Accuracy, < 2 GHz models					
Performance checks	Bandwidth	Vertical scale	Low limit	Test result	High limit
Channel 5 DC Gain Accuracy, 0 V offset, 0 V vertical position, 1 MΩ	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%
Channel 6 DC Gain Accuracy, 0 V offset, 0 V vertical position, 50 Ω	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%
Channel 6 DC Gain Accuracy, 0 V offset, 0 V vertical position, 1 MΩ	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%
MSO58 models					

DC Gain Accuracy, < 2 GHz models					
Performance checks	Bandwidth	Vertical scale	Low limit	Test result	High limit
Channel 7 DC Gain Accuracy, 0 V offset, 0 V vertical position, 50 Ω	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%
Channel 7 DC Gain Accuracy, 0 V offset, 0 V vertical position, 1 MΩ	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%
Channel 8 DC Gain Accuracy, 0 V offset, 0 V vertical position, 50 Ω	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-2%		2%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%

DC Gain Accuracy, < 2 GHz models					
Performance checks	**Bandwidth**	**Vertical scale**	**Low limit**	**Test result**	**High limit**
Channel 8 DC Gain Accuracy, 0 V offset, 0 V vertical position, 1 MΩ	20 MHz	1 mV/div	-2%		2%
		2 mV/div	-1%		1%
		5 mV/div	-1%		1%
		10 mV/div	-1%		1%
		20 mV/div	-1%		1%
		50 mV/div	-1%		1%
		100 mV/div	-1%		1%
		200 mV/div	-1%		1%
		500 mV/div	-1%		1%
		1 V/div	-1%		1%
	250 MHz	20 mV/div	-1%		1%
	FULL	20 mV/div	-1%		1%

DC Offset Accuracy test record

Offset Accuracy					
Performance checks	**Vertical scale**	**Vertical offset** [1]	**Low limit**	**Test result**	**High limit**
All models:					
Channel 1 DC Offset Accuracy, 20 MHz BW, 50 Ω	1 mV/div	900 mV	895.3 mV		904.7 mV
	1 mV/div	-900 mV	-904.7 mV		-895.3 mV
	100 mV/div	5.0 V	4.965 V		5.035 V
	100 mV/div	-5.0 V	-5.035 V		-4.965 V
Channel 1 DC Offset Accuracy, 20 MHz BW, 1 MΩ	1 mV/div	900 mV	895.3 mV		904.7 mV
	1 mV/div	-900 mV	-904.7 mV		-895.3 mV
	100 mV/div	9.0 V	8.935 V		9.065 V
	100 mV/div	- 9.0 V	-9.065 V		-8.935 V
	500 mV/div	9.0 V	8.855 V		9.145 V
	500 mV/div	- 9.0 V	-9.145 V		-8.855 V
	1.01 V/div	99.5 V	98.80 V		100.2 V
	1.01 V/div	-99.5 V	-100.2 V		-98.80 V
	5 V/div	99.5 V	98.0 V		101.0 V
	5 V/div	-99.5 V	-101.0 V		-98.0 V

[1] Use this value for both the calibrator output and the oscilloscope offset setting.

Offset Accuracy					
Performance checks	Vertical scale	Vertical offset [1]	Low limit	Test result	High limit
Channel 2 DC Offset Accuracy, 20 MHz BW, 50 Ω	1 mV/div	900 mV	895.3 mV		904.7 mV
	1 mV/div	-900 mV	-904.7 mV		-895.3 mV
	100 mV/div	5.0 V	4.965 V		5.035 V
	100 mV/div	-5.0 V	-5.035 V		-4.965 V
Channel 2 DC Offset Accuracy, 20 MHz BW, 1 MΩ	1 mV/div	900 mV	895.3 mV		904.7 mV
	1 mV/div	-900 mV	-904.7 mV		-895.3 mV
	100 mV/div	9.0 V	8.935 V		9.065 V
	100 mV/div	-9.0 V	-9.065 V		-8.935 V
	500 mV/div	9.0 V	8.855 V		9.145 V
	500 mV/div	- 9.0 V	-9.145 V		-8.855 V
	1.01 V/div	99.5 V	98.80 V		100.2 V
	1.01 V/div	-99.5 V	-100.2 V		-98.80 V
	5 V/div	99.5 V	98.0 V		101.0 V
	5 V/div	-99.5 V	-101.0 V		-98.0 V
Channel 3 DC Offset Accuracy, 20 MHz BW, 50 Ω	1 mV/div	900 mV	895.3 mV		904.7 mV
	1 mV/div	-900 mV	-904.7 mV		-895.3 mV
	100 mV/div	5.0 V	4.965 V		5.035 V
	100 mV/div	-5.0 V	-5.035 V		-4.965 V
Channel 3 DC Offset Accuracy, 20 MHz BW, 1 MΩ	1 mV/div	900 mV	895.3 mV		904.7 mV
	1 mV/div	-900 mV	-904.7 mV		-895.3 mV
	100 mV/div	9.0 V	8.935 V		9.065 V
	100 mV/div	-9.0 V	-9.065 V		-8.935 V
	500 mV/div	9.0 V	8.855 V		9.145 V
	500 mV/div	- 9.0 V	-9.145 V		-8.855 V
	1.01 V/div	99.5 V	98.80 V		100.2 V
	1.01 V/div	-99.5 V	-100.2 V		-98.80 V
	5 V/div	99.5 V	98.0 V		101.0 V
	5 V/div	-99.5 V	-101.0 V		-98.0 V
Channel 4 DC Offset Accuracy, 20 MHz BW, 50 Ω	1 mV/div	900 mV	895.3 mV		904.7 mV
	1 mV/div	-900 mV	-904.7 mV		-895.3 mV
	100 mV/div	5.0 V	4.965 V		5.035 V
	100 mV/div	-5.0 V	-5.035 V		-4.965 V

[1] Use this value for both the calibrator output and the oscilloscope offset setting.

Offset Accuracy					
Performance checks	**Vertical scale**	**Vertical offset [1]**	**Low limit**	**Test result**	**High limit**
Channel 4 DC Offset Accuracy, 20 MHz BW, 1 MΩ	1 mV/div	900 mV	895.3 mV		904.7 mV
	1 mV/div	-900 mV	-904.7 mV		-895.3 mV
	100 mV/div	9.0 V	8.935 V		9.065 V
	100 mV/div	-9.0 V	-9.065 V		-8.935 V
	500 mV/div	9.0 V	8.855 V		9.145 V
	500 mV/div	- 9.0 V	-9.145 V		-8.855 V
	1.01 V/div	99.5 V	98.80 V		100.2 V
	1.01 V/div	-99.5 V	-100.2 V		-98.80 V
	5 V/div	99.5 V	98.0 V		101.0 V
	5 V/div	-99.5 V	-101.0 V		-98.0 V
MSO56 and MSO58 models:					
Channel 5 DC Offset Accuracy, 20 MHz BW, 50 Ω	1 mV/div	900 mV	895.3 mV		904.7 mV
	1 mV/div	-900 mV	-904.7 mV		-895.3 mV
	100 mV/div	5.0 V	4.965 V		5.035 V
	100 mV/div	-5.0 V	-5.035 V		-4.965 V
Channel 5 DC Offset Accuracy, 20 MHz BW, 1 MΩ	1 mV/div	900 mV	895.3 mV		904.7 mV
	1 mV/div	-900 mV	-904.7 mV		-895.3 mV
	100 mV/div	9.0 V	8.935 V		9.065 V
	100 mV/div	- 9.0 V	-9.065 V		-8.935 V
	500 mV/div	9.0 V	8.855 V		9.145 V
	500 mV/div	- 9.0 V	-9.145 V		-8.855 V
	1.01 V/div	99.5 V	98.80 V		100.2 V
	1.01 V/div	-99.5 V	-100.2 V		-98.80 V
	5 V/div	99.5 V	98.0 V		101.0 V
	5 V/div	-99.5 V	-101.0 V		-98.0 V
Channel 6 DC Offset Accuracy, 20 MHz BW, 50 Ω	1 mV/div	900 mV	895.3 mV		904.7 mV
	1 mV/div	-900 mV	-904.7 mV		-895.3 mV
	100 mV/div	5.0 V	4.965 V		5.035 V
	100 mV/div	-5.0 V	-5.035 V		-4.965 V

[1] Use this value for both the calibrator output and the oscilloscope offset setting.

Offset Accuracy					
Performance checks	**Vertical scale**	**Vertical offset** [1]	**Low limit**	**Test result**	**High limit**
Channel 6 DC Offset Accuracy, 20 MHz BW, 1 MΩ	1 mV/div	900 mV	895.3 mV		904.7 mV
	1 mV/div	-900 mV	-904.7 mV		-895.3 mV
	100 mV/div	9.0 V	8.935 V		9.065 V
	100 mV/div	-9.0 V	-9.065 V		-8.935 V
	500 mV/div	9.0 V	8.855 V		9.145 V
	500 mV/div	- 9.0 V	-9.145 V		-8.855 V
	1.01 V/div	99.5 V	98.80 V		100.2 V
	1.01 V/div	-99.5 V	-100.2 V		-98.80 V
	5 V/div	99.5 V	98.0 V		101.0 V
	5 V/div	-99.5 V	-101.0 V		-98.0 V
MSO58 models:					
Channel 7 DC Offset Accuracy, 20 MHz BW, 50 Ω	1 mV/div	900 mV	895.3 mV		904.7 mV
	1 mV/div	-900 mV	-904.7 mV		-895.3 mV
	100 mV/div	5.0 V	4.965 V		5.035 V
	100 mV/div	-5.0 V	-5.035 V		-4.965 V
Channel 7 DC Offset Accuracy, 20 MHz BW, 1 MΩ	1 mV/div	900 mV	895.3 mV		904.7 mV
	1 mV/div	-900 mV	-904.7 mV		-895.3 mV
	100 mV/div	9.0 V	8.935 V		9.065 V
	100 mV/div	-9.0 V	-9.065 V		-8.935 V
	500 mV/div	9.0 V	8.855 V		9.145 V
	500 mV/div	- 9.0 V	-9.145 V		-8.855 V
	1.01 V/div	99.5 V	98.80 V		100.2 V
	1.01 V/div	-99.5 V	-100.2 V		-98.80 V
	5 V/div	99.5 V	98.0 V		101.0 V
	5 V/div	-99.5 V	-101.0 V		-98.0 V
Channel 8 DC Offset Accuracy, 20 MHz BW, 50 Ω	1 mV/div	900 mV	895.3 mV		904.7 mV
	1 mV/div	-900 mV	-904.7 mV		-895.3 mV
	100 mV/div	5.0 V	4.965 V		5.035 V
	100 mV/div	-5.0 V	-5.035 V		-4.965 V

[1] Use this value for both the calibrator output and the oscilloscope offset setting.

Offset Accuracy					
Performance checks	**Vertical scale**	**Vertical offset** [1]	**Low limit**	**Test result**	**High limit**
Channel 8 DC Offset Accuracy, 20 MHz BW, 1 MΩ	1 mV/div	900 mV	895.3 mV		904.7 mV
	1 mV/div	-900 mV	-904.7 mV		-895.3 mV
	100 mV/div	9.0 V	8.935 V		9.065 V
	100 mV/div	-9.0 V	-9.065 V		-8.935 V
	500 mV/div	9.0 V	8.855 V		9.145 V
	500 mV/div	- 9.0 V	-9.145 V		-8.855 V
	1.01 V/div	99.5 V	98.80 V		100.2 V
	1.01 V/div	-99.5 V	-100.2 V		-98.80 V
	5 V/div	99.5 V	98.0 V		101.0 V
	5 V/div	-99.5 V	-101.0 V		-98.0 V

Analog Bandwidth test record

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	V_{in-pp}	V_{bw-pp}	**Limit**	**Test result Gain =** V_{bw-pp}/V_{in-pp}
2 GHz models							
Channel 1	50 Ω	1 mV/div	5 ns/div (175 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (1.5 GHz)			≥ 0.707	
		10 mV/div	1 ns/div (Full BW)			≥ 0.707	
		50 mV/div	1 ns/div (Full BW)			≥ 0.707	
		100 mV/div	1 ns/div (Full BW)			≥ 0.707	
		1 V/div	1 ns/div (Full BW)			≥ 0.707	

[1] Use this value for both the calibrator output and the oscilloscope offset setting.

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	**V_{in-pp}**	**V_{bw-pp}**	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 1	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
Channel 2	50 Ω	1 mV/div	5 ns/div (175 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (1.5 GHz)			≥ 0.707	
		10 mV/div	1 ns/div (Full BW)			≥ 0.707	
		50 mV/div	1 ns/div (Full BW)			≥ 0.707	
		100 mV/div	1 ns/div (Full BW)			≥ 0.707	
		1 V/div	1 ns/div (Full BW)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	V_{in-pp}	V_{bw-pp}	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 2	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
Channel 3	50 Ω	1 mV/div	5 ns/div (175 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (1.5 GHz)			≥ 0.707	
		10 mV/div	1 ns/div (Full BW)			≥ 0.707	
		50 mV/div	1 ns/div (Full BW)			≥ 0.707	
		100 mV/div	1 ns/div (Full BW)			≥ 0.707	
		1 V/div	1 ns/div (Full BW)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	$V_{in\text{-}pp}$	$V_{bw\text{-}pp}$	**Limit**	**Test result Gain = $V_{bw\text{-}pp}$/ $V_{in\text{-}pp}$**
Channel 3	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
Channel 4	50 Ω	1 mV/div	5 ns/div (175 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (1.5 GHz)			≥ 0.707	
		10 mV/div	1 ns/div (Full BW)			≥ 0.707	
		50 mV/div	1 ns/div (Full BW)			≥ 0.707	
		100 mV/div	1 ns/div (Full BW)			≥ 0.707	
		1 V/div	1 ns/div (Full BW)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	**V_{in-pp}**	**V_{bw-pp}**	**Limit**	**Test result Gain = V_{bw-pp}/V_{in-pp}**
Channel 4	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
MSO56 and MSO58 models:							
Channel 5	50 Ω	1 mV/div	5 ns/div (175 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (1.5 GHz)			≥ 0.707	
		10 mV/div	1 ns/div (Full BW)			≥ 0.707	
		50 mV/div	1 ns/div (Full BW)			≥ 0.707	
		100 mV/div	1 ns/div (Full BW)			≥ 0.707	
		1 V/div	1 ns/div (Full BW)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	**V_{in-pp}**	**V_{bw-pp}**	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 5	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
Channel 6	50 Ω	1 mV/div	5 ns/div (175 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (1.5 GHz)			≥ 0.707	
		10 mV/div	1 ns/div (Full BW)			≥ 0.707	
		50 mV/div	1 ns/div (Full BW)			≥ 0.707	
		100 mV/div	1 ns/div (Full BW)			≥ 0.707	
		1 V/div	1 ns/div (Full BW)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	V_{in-pp}	V_{bw-pp}	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 6	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
MSO58 models:							
Channel 7	50 Ω	1 mV/div	5 ns/div (175 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (1.5 GHz)			≥ 0.707	
		10 mV/div	1 ns/div (Full BW)			≥ 0.707	
		50 mV/div	1 ns/div (Full BW)			≥ 0.707	
		100 mV/div	1 ns/div (Full BW)			≥ 0.707	
		1 V/div	1 ns/div (Full BW)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	V_{in-pp}	V_{bw-pp}	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 7	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
Channel 8	50 Ω	1 mV/div	5 ns/div (175 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (1.5 GHz)			≥ 0.707	
		10 mV/div	1 ns/div (Full BW)			≥ 0.707	
		50 mV/div	1 ns/div (Full BW)			≥ 0.707	
		100 mV/div	1 ns/div (Full BW)			≥ 0.707	
		1 V/div	1 ns/div (Full BW)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	V_{in-pp}	V_{bw-pp}	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 8	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
1 GHz models							
Channel 1	50 Ω	1 mV/div	5 ns/div (1 GHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (1.0 GHz)			≥ 0.707	
		5 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		10 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		50 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		100 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		1 V/div	1 ns/div (1.0 GHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	V_{in-pp}	V_{bw-pp}	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 1	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
Channel 2	50 Ω	1 mV/div	5 ns/div (1 GHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (1.0 GHz)			≥ 0.707	
		5 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		10 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		50 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		100 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		1 V/div	1 ns/div (1.0 GHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	**V_{in-pp}**	**V_{bw-pp}**	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 2	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
Channel 3	50 Ω	1 mV/div	5 ns/div (1 GHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (1.0 GHz)			≥ 0.707	
		5 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		10 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		50 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		100 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		1 V/div	1 ns/div (1.0 GHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	$V_{in\text{-}pp}$	$V_{bw\text{-}pp}$	**Limit**	**Test result Gain = $V_{bw\text{-}pp}$/ $V_{in\text{-}pp}$**
Channel 3	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
Channel 4	50 Ω	1 mV/div	5 ns/div (1 GHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (1.0 GHz)			≥ 0.707	
		5 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		10 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		50 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		100 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		1 V/div	1 ns/div (1.0 GHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	V_{in-pp}	V_{bw-pp}	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 4	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
MSO56 and MSO58 models:							
Channel 5	50 Ω	1 mV/div	5 ns/div (1 GHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (1.0 GHz)			≥ 0.707	
		5 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		10 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		50 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		100 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		1 V/div	1 ns/div (1.0 GHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	V_{in-pp}	V_{bw-pp}	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 5	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
Channel 6	50 Ω	1 mV/div	5 ns/div (1 GHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (1.0 GHz)			≥ 0.707	
		5 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		10 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		50 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		100 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		1 V/div	1 ns/div (1.0 GHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	**V_{in-pp}**	**V_{bw-pp}**	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 6	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
MSO58 models:							
Channel 7	50 Ω	1 mV/div	5 ns/div (1 GHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (1.0 GHz)			≥ 0.707	
		5 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		10 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		50 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		100 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		1 V/div	1 ns/div (1.0 GHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	V_{in-pp}	V_{bw-pp}	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 7	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
Channel 8	50 Ω	1 mV/div	5 ns/div (1 GHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (1.0 GHz)			≥ 0.707	
		5 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		10 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		50 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		100 mV/div	1 ns/div (1.0 GHz)			≥ 0.707	
		1 V/div	1 ns/div (1.0 GHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	**V_{in-pp}**	**V_{bw-pp}**	**Limit**	**Test result Gain = V_{bw-pp}/V_{in-pp}**
Channel 8	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
500 MHz models							
Channel 1	50 Ω	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	**V_{in-pp}**	**V_{bw-pp}**	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 1	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
Channel 2	50 Ω	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	V_{in-pp}	V_{bw-pp}	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 2	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
Channel 3	50 Ω	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	**V_{in-pp}**	**V_{bw-pp}**	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 3	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
Channel 4	50 Ω	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	**V_{in-pp}**	**V_{bw-pp}**	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 4	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
MSO56 and MSO58 models:							
Channel 5	50 Ω	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	V_{in-pp}	V_{bw-pp}	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 5	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
Channel 6	50 Ω	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	$V_{in\text{-}pp}$	$V_{bw\text{-}pp}$	**Limit**	**Test result Gain =** $V_{bw\text{-}pp}/V_{in\text{-}pp}$
Channel 6	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
MSO58 models:							
Channel 7	50 Ω	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	V_{in-pp}	V_{bw-pp}	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 7	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
Channel 8	50 Ω	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	$V_{in\text{-}pp}$	$V_{bw\text{-}pp}$	**Limit**	**Test result Gain = $V_{bw\text{-}pp}$/ $V_{in\text{-}pp}$**
Channel 8	1 MΩ, typical	1 mV/div	5 ns/div (500 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (500 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (500 MHz)			≥ 0.707	
		1 V/div	1 ns/div (500 MHz)			≥ 0.707	
350 MHz models							
Channel 1	50 Ω	1 mV/div	5 ns/div (350 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		1 V/div	1 ns/div (350 MHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	$V_{in\text{-}pp}$	$V_{bw\text{-}pp}$	**Limit**	**Test result Gain = $V_{bw\text{-}pp}$/ $V_{in\text{-}pp}$**
Channel 1	1 MΩ, typical	1 mV/div	5 ns/div (350 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		1 V/div	1 ns/div (350 MHz)			≥ 0.707	
Channel 2	50 Ω	1 mV/div	5 ns/div (350 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		1 V/div	1 ns/div (350 MHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	**V_{in-pp}**	**V_{bw-pp}**	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 2	1 MΩ, typical	1 mV/div	5 ns/div (350 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		1 V/div	1 ns/div (350 MHz)			≥ 0.707	
Channel 3	50 Ω	1 mV/div	5 ns/div (350 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		1 V/div	1 ns/div (350 MHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	$V_{in\text{-}pp}$	$V_{bw\text{-}pp}$	**Limit**	**Test result Gain = $V_{bw\text{-}pp}$/ $V_{in\text{-}pp}$**
Channel 3	1 MΩ, typical	1 mV/div	5 ns/div (350 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		1 V/div	1 ns/div (350 MHz)			≥ 0.707	
Channel 4	50 Ω	1 mV/div	5 ns/div (350 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		1 V/div	1 ns/div (350 MHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	**$V_{in\text{-}pp}$**	**$V_{bw\text{-}pp}$**	**Limit**	**Test result Gain = $V_{bw\text{-}pp}$/ $V_{in\text{-}pp}$**
Channel 4	1 MΩ, typical	1 mV/div	5 ns/div (350 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		1 V/div	1 ns/div (350 MHz)			≥ 0.707	
MSO56 and MSO58 models:							
Channel 5	50 Ω	1 mV/div	5 ns/div (350 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		1 V/div	1 ns/div (350 MHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	V_{in-pp}	V_{bw-pp}	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 5	1 MΩ, typical	1 mV/div	5 ns/div (350 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		1 V/div	1 ns/div (350 MHz)			≥ 0.707	
Channel 6	50 Ω	1 mV/div	5 ns/div (350 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		1 V/div	1 ns/div (350 MHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	$V_{in\text{-}pp}$	$V_{bw\text{-}pp}$	**Limit**	**Test result Gain = $V_{bw\text{-}pp}$/ $V_{in\text{-}pp}$**
Channel 6	1 MΩ, typical	1 mV/div	5 ns/div (350 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		1 V/div	1 ns/div (350 MHz)			≥ 0.707	
MSO58 models:							
Channel 7	50 Ω	1 mV/div	5 ns/div (350 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		1 V/div	1 ns/div (350 MHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	V_{in-pp}	V_{bw-pp}	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 7	1 MΩ, typical	1 mV/div	5 ns/div (350 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		1 V/div	1 ns/div (350 MHz)			≥ 0.707	
Channel 8	50 Ω	1 mV/div	5 ns/div (350 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		1 V/div	1 ns/div (350 MHz)			≥ 0.707	

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	**Impedance**	**Vertical scale**	**Horizontal scale**	**V_{in-pp}**	**V_{bw-pp}**	**Limit**	**Test result Gain = V_{bw-pp}/ V_{in-pp}**
Channel 8	1 MΩ, typical	1 mV/div	5 ns/div (350 MHz)			≥ 0.707	
		2 mV/div	2.5 ns/div (350 MHz)			≥ 0.707	
		5 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		10 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		50 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		100 mV/div	1 ns/div (350 MHz)			≥ 0.707	
		1 V/div	1 ns/div (350 MHz)			≥ 0.707	

Random Noise, sample acquisition mode test record

Random Noise, sample acquisition mode: 2 GHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [2]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Channel 1	1 mV/div	Full		0.270		0.090
		250 MHz limit		0.158		0.090
		20 MHz limit		0.086		0.040
	2 mV/div	Full		0.291		0.152
		250 MHz limit		0.158		0.114
		20 MHz limit		0.090		0.051
	5 mV/div	Full		0.315		0.456
		250 MHz limit		0.185		0.155
		20 MHz limit		0.121		0.089
	10 mV/div	Full		0.377		0.643
		250 MHz limit		0.271		0.244
		20 MHz limit		0.201		0.174
	20 mV/div	Full		0.572		1.06
		250 MHz limit		0.462		0.436
		20 MHz limit		0.373		0.347
	50 mV/div	Full		1.32		2.51
		250 MHz limit		1.11		1.06
		20 MHz limit		0.922		0.869
	100 mV/div	Full		2.75		6.15
		250 MHz limit		2.24		2.38
		20 MHz limit		1.88		1.74
	1 V/div	Full		28.6		39.6
		250 MHz limit		23.5		21.1
		20 MHz limit		18.7		17.4

[2] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 2 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [2]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 2	1 mV/div	Full		0.270		0.090
		250 MHz limit		0.158		0.090
		20 MHz limit		0.086		0.040
	2 mV/div	Full		0.291		0.152
		250 MHz limit		0.158		0.114
		20 MHz limit		0.090		0.051
	5 mV/div	Full		0.315		0.456
		250 MHz limit		0.185		0.155
		20 MHz limit		0.121		0.089
	10 mV/div	Full		0.377		0.643
		250 MHz limit		0.271		0.244
		20 MHz limit		0.201		0.174
	20 mV/div	Full		0.572		1.06
		250 MHz limit		0.462		0.436
		20 MHz limit		0.373		0.347
	50 mV/div	Full		1.32		2.51
		250 MHz limit		1.11		1.06
		20 MHz limit		0.922		0.869
	100 mV/div	Full		2.75		6.15
		250 MHz limit		2.24		2.38
		20 MHz limit		1.88		1.74
	1 V/div	Full		28.6		39.6
		250 MHz limit		23.5		21.1
		20 MHz limit		18.7		17.4

[2] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 2 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [2]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 3	1 mV/div	Full		0.270		0.090
		250 MHz limit		0.158		0.090
		20 MHz limit		0.086		0.040
	2 mV/div	Full		0.291		0.152
		250 MHz limit		0.158		0.114
		20 MHz limit		0.090		0.051
	5 mV/div	Full		0.315		0.456
		250 MHz limit		0.185		0.155
		20 MHz limit		0.121		0.089
	10 mV/div	Full		0.377		0.643
		250 MHz limit		0.271		0.244
		20 MHz limit		0.201		0.174
	20 mV/div	Full		0.572		1.06
		250 MHz limit		0.462		0.436
		20 MHz limit		0.373		0.347
	50 mV/div	Full		1.32		2.51
		250 MHz limit		1.11		1.06
		20 MHz limit		0.922		0.869
	100 mV/div	Full		2.75		6.15
		250 MHz limit		2.24		2.38
		20 MHz limit		1.88		1.74
	1 V/div	Full		28.6		39.6
		250 MHz limit		23.5		21.1
		20 MHz limit		18.7		17.4

[2] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 2 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [2]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 4	1 mV/div	Full		0.270		0.090
		250 MHz limit		0.158		0.090
		20 MHz limit		0.086		0.040
	2 mV/div	Full		0.291		0.152
		250 MHz limit		0.158		0.114
		20 MHz limit		0.090		0.051
	5 mV/div	Full		0.315		0.456
		250 MHz limit		0.185		0.155
		20 MHz limit		0.121		0.089
	10 mV/div	Full		0.377		0.643
		250 MHz limit		0.271		0.244
		20 MHz limit		0.201		0.174
	20 mV/div	Full		0.572		1.06
		250 MHz limit		0.462		0.436
		20 MHz limit		0.373		0.347
	50 mV/div	Full		1.32		2.51
		250 MHz limit		1.11		1.06
		20 MHz limit		0.922		0.869
	100 mV/div	Full		2.75		6.15
		250 MHz limit		2.24		2.38
		20 MHz limit		1.88		1.74
	1 V/div	Full		28.6		39.6
		250 MHz limit		23.5		21.1
		20 MHz limit		18.7		17.4

[2] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 2 GHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [2]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
MSO56 and MSO58 models:						
Channel 5	1 mV/div	Full		0.270		0.090
		250 MHz limit		0.158		0.090
		20 MHz limit		0.086		0.040
	2 mV/div	Full		0.291		0.152
		250 MHz limit		0.158		0.114
		20 MHz limit		0.090		0.051
	5 mV/div	Full		0.315		0.456
		250 MHz limit		0.185		0.155
		20 MHz limit		0.121		0.089
	10 mV/div	Full		0.377		0.643
		250 MHz limit		0.271		0.244
		20 MHz limit		0.201		0.174
	20 mV/div	Full		0.572		1.06
		250 MHz limit		0.462		0.436
		20 MHz limit		0.373		0.347
	50 mV/div	Full		1.32		2.51
		250 MHz limit		1.11		1.06
		20 MHz limit		0.922		0.869
	100 mV/div	Full		2.75		6.15
		250 MHz limit		2.24		2.38
		20 MHz limit		1.88		1.74
	1 V/div	Full		28.6		39.6
		250 MHz limit		23.5		21.1
		20 MHz limit		18.7		17.4

[2] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 2 GHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [2]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Channel 6	1 mV/div	Full		0.270		0.090
		250 MHz limit		0.158		0.090
		20 MHz limit		0.086		0.040
	2 mV/div	Full		0.291		0.152
		250 MHz limit		0.158		0.114
		20 MHz limit		0.090		0.051
	5 mV/div	Full		0.315		0.456
		250 MHz limit		0.185		0.155
		20 MHz limit		0.121		0.089
	10 mV/div	Full		0.377		0.643
		250 MHz limit		0.271		0.244
		20 MHz limit		0.201		0.174
	20 mV/div	Full		0.572		1.06
		250 MHz limit		0.462		0.436
		20 MHz limit		0.373		0.347
	50 mV/div	Full		1.32		2.51
		250 MHz limit		1.11		1.06
		20 MHz limit		0.922		0.869
	100 mV/div	Full		2.75		6.15
		250 MHz limit		2.24		2.38
		20 MHz limit		1.88		1.74
	1 V/div	Full		28.6		39.6
		250 MHz limit		23.5		21.1
		20 MHz limit		18.7		17.4

[2] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 2 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [2]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
MSO56 and MSO58 models:						
Channel 7	1 mV/div	Full		0.270		0.090
		250 MHz limit		0.158		0.090
		20 MHz limit		0.086		0.040
	2 mV/div	Full		0.291		0.152
		250 MHz limit		0.158		0.114
		20 MHz limit		0.090		0.051
	5 mV/div	Full		0.315		0.456
		250 MHz limit		0.185		0.155
		20 MHz limit		0.121		0.089
	10 mV/div	Full		0.377		0.643
		250 MHz limit		0.271		0.244
		20 MHz limit		0.201		0.174
	20 mV/div	Full		0.572		1.06
		250 MHz limit		0.462		0.436
		20 MHz limit		0.373		0.347
	50 mV/div	Full		1.32		2.51
		250 MHz limit		1.11		1.06
		20 MHz limit		0.922		0.869
	100 mV/div	Full		2.75		6.15
		250 MHz limit		2.24		2.38
		20 MHz limit		1.88		1.74
	1 V/div	Full		28.6		39.6
		250 MHz limit		23.5		21.1
		20 MHz limit		18.7		17.4

2 Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 2 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [2]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 8	1 mV/div	Full		0.270		0.090
		250 MHz limit		0.158		0.090
		20 MHz limit		0.086		0.040
	2 mV/div	Full		0.291		0.152
		250 MHz limit		0.158		0.114
		20 MHz limit		0.090		0.051
	5 mV/div	Full		0.315		0.456
		250 MHz limit		0.185		0.155
		20 MHz limit		0.121		0.089
	10 mV/div	Full		0.377		0.643
		250 MHz limit		0.271		0.244
		20 MHz limit		0.201		0.174
	20 mV/div	Full		0.572		1.06
		250 MHz limit		0.462		0.436
		20 MHz limit		0.373		0.347
	50 mV/div	Full		1.32		2.51
		250 MHz limit		1.11		1.06
		20 MHz limit		0.922		0.869
	100 mV/div	Full		2.75		6.15
		250 MHz limit		2.24		2.38
		20 MHz limit		1.88		1.74
	1 V/div	Full		28.6		39.6
		250 MHz limit		23.5		21.1
		20 MHz limit		18.7		17.4

[2] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 1 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [3]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 1	1 mV/div	Full		0.258		0.372
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.254		0.376
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.272		0.395
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.319		0.449
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.455		.614
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		1.03		1.26
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		2.18		2.85
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		23.1		24.6
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[3] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 1 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [3]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 2	1 mV/div	Full		0.258		0.372
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.254		0.376
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.272		0.395
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.319		0.449
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.455		.614
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		1.03		1.26
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		2.18		2.85
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		23.1		24.6
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[3] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 1 GHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [3]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Channel 3	1 mV/div	Full		0.258		0.372
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.254		0.376
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.272		0.395
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.319		0.449
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.455		.614
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		1.03		1.26
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		2.18		2.85
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		23.1		24.6
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[3] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 1 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [3]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 4	1 mV/div	Full		0.258		0.372
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.254		0.376
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.272		0.395
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.319		0.449
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.455		.614
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		1.03		1.26
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		2.18		2.85
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		23.1		24.6
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[3] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 1 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [3]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
MSO56 and MSO58 models:						
Channel 5	1 mV/div	Full		0.258		0.372
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.254		0.376
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.272		0.395
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.319		0.449
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.455		.614
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		1.03		1.26
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		2.18		2.85
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		23.1		24.6
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[3] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 1 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [3]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 6	1 mV/div	Full		0.258		0.372
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.254		0.376
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.272		0.395
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.319		0.449
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.455		.614
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		1.03		1.26
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		2.18		2.85
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		23.1		24.6
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[3] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 1 GHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [3]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
MSO56 and MSO58 models:						
Channel 7	1 mV/div	Full		0.258		0.372
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.254		0.376
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.272		0.395
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.319		0.449
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.455		.614
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		1.03		1.26
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		2.18		2.85
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		23.1		24.6
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[3] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 1 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [3]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 8	1 mV/div	Full		0.258		0.372
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.254		0.376
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.272		0.395
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.319		0.449
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.455		.614
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		1.03		1.26
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		2.18		2.85
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		23.1		24.6
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[3] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 500 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [4]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 1	1 mV/div	Full		0.258		0.253
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.254		0.262
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.272		0.292
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.319		0.359
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.455		.529
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		1.03		1.14
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		2.18		2.5
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		23.1		22.4
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[4] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 500 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [4]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 2	1 mV/div	Full		0.258		0.253
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.254		0.262
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.272		0.292
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.319		0.359
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.455		.529
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		1.03		1.14
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		2.18		2.5
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		23.1		22.4
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[4] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 500 MHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [4]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Channel 3	1 mV/div	Full		0.258		0.253
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.254		0.262
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.272		0.292
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.319		0.359
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.455		.529
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		1.03		1.14
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		2.18		2.5
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		23.1		22.4
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[4] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 500 MHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [4]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Channel 4	1 mV/div	Full		0.258		0.253
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.254		0.262
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.272		0.292
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.319		0.359
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.455		.529
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		1.03		1.14
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		2.18		2.5
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		23.1		22.4
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[4] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 500 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [4]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
MSO56 and MSO58 models:						
Channel 5	1 mV/div	Full		0.258		0.253
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.254		0.262
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.272		0.292
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.319		0.359
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.455		.529
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		1.03		1.14
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		2.18		2.5
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		23.1		22.4
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[4] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 500 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [4]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 6	1 mV/div	Full		0.258		0.253
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.254		0.262
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.272		0.292
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.319		0.359
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.455		.529
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		1.03		1.14
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		2.18		2.5
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		23.1		22.4
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[4] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 500 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [4]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
MSO56 and MSO58 models:						
Channel 7	1 mV/div	Full		0.258		0.253
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.254		0.262
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.272		0.292
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.319		0.359
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.455		.529
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		1.03		1.14
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		2.18		2.5
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		23.1		22.4
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[4] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 500 MHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [4]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Channel 8	1 mV/div	Full		0.258		0.253
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.254		0.262
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.272		0.292
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.319		0.359
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.455		.529
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		1.03		1.14
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		2.18		2.5
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		23.1		22.4
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[4] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 350 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [5]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 1	1 mV/div	Full		0.188		0.181
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.193		0.190
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.207		0.222
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.264		0.284
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.422		0.436
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		0.898		0.962
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		1.91		2.08
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		21.1		18.92
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

5 Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 350 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [5]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 2	1 mV/div	Full		0.188		0.181
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.193		0.190
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.207		0.222
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.264		0.284
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.422		0.436
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		0.898		0.962
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		1.91		2.08
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		21.1		18.92
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[5] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 350 MHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [5]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Channel 3	1 mV/div	Full		0.188		0.181
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.193		0.190
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.207		0.222
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.264		0.284
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.422		0.436
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		0.898		0.962
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		1.91		2.08
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		21.1		18.92
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[5] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 350 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [5]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 4	1 mV/div	Full		0.188		0.181
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.193		0.190
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.207		0.222
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.264		0.284
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.422		0.436
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		0.898		0.962
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		1.91		2.08
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		21.1		18.92
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

5 Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 350 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [5]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
MSO56 and MSO58 models:						
Channel 5	1 mV/div	Full		0.188		0.181
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.193		0.190
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.207		0.222
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.264		0.284
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.422		0.436
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		0.898		0.962
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		1.91		2.08
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		21.1		18.92
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[5] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 350 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [5]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 6	1 mV/div	Full		0.188		0.181
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.193		0.190
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.207		0.222
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.264		0.284
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.422		0.436
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		0.898		0.962
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		1.91		2.08
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		21.1		18.92
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[5] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 350 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [5]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
MSO56 and MSO58 models:						
Channel 7	1 mV/div	Full		0.188		0.181
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.193		0.190
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.207		0.222
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.264		0.284
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.422		0.436
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		0.898		0.962
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		1.91		2.08
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		21.1		18.92
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

[5] Full = the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: 350 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [5]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 8	1 mV/div	Full		0.188		0.181
		250 MHz limit		0.158		0.153
		20 MHz limit		0.088		0.091
	2 mV/div	Full		0.193		0.190
		250 MHz limit		0.158		0.164
		20 MHz limit		0.092		0.102
	5 mV/div	Full		0.207		0.222
		250 MHz limit		0.185		0.201
		20 MHz limit		0.116		0.136
	10 mV/div	Full		0.264		0.284
		250 MHz limit		0.251		0.272
		20 MHz limit		0.188		0.197
	20 mV/div	Full		0.422		0.436
		250 MHz limit		0.422		0.435
		20 MHz limit		0.347		0.347
	50 mV/div	Full		0.898		0.962
		250 MHz limit		1.00		0.982
		20 MHz limit		0.869		0.869
	100 mV/div	Full		1.91		2.08
		250 MHz limit		2.06		2.09
		20 MHz limit		1.74		1.74
	1 V/div	Full		21.1		18.92
		250 MHz limit		21.6		19.4
		20 MHz limit		17.4		17.4

5 Full = the highest bandwidth setting you can select.

Random Noise, High Res mode test record

Random Noise, High Res mode: 2 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [6]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 1	1 mV/div	Full		0.269		0.087
		250 MHz limit		0.152		0.087
		20 MHz limit		0.084		0.035
	2 mV/div	Full		0.290		0.125
		250 MHz limit		0.152		0.100
		20 MHz limit		0.086		0.037
	5 mV/div	Full		0.308		0.261
		250 MHz limit		0.172		0.140
		20 MHz limit		0.089		0.048
	10 mV/div	Full		0.359		0.356
		250 MHz limit		0.224		0.191
		20 MHz limit		0.108		0.073
	20 mV/div	Full		0.538		0.607
		250 MHz limit		0.360		0.325
		20 MHz limit		0.162		0.137
	50 mV/div	Full		1.19		1.43
		250 MHz limit		0.803		0.763
		20 MHz limit		0.351		0.327
	100 mV/div	Full		2.45		3.56
		250 MHz limit		1.76		1.91
		20 MHz limit		0.780		0.779
	1 V/div	Full		26.3		23.8
		250 MHz limit		18.9		14.0
		20 MHz limit		8.46		6.05

[6] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 2 GHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [6]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Channel 2	1 mV/div	Full		0.269		0.087
		250 MHz limit		0.152		0.087
		20 MHz limit		0.084		0.035
	2 mV/div	Full		0.290		0.125
		250 MHz limit		0.152		0.100
		20 MHz limit		0.086		0.037
	5 mV/div	Full		0.308		0.261
		250 MHz limit		0.172		0.140
		20 MHz limit		0.089		0.048
	10 mV/div	Full		0.359		0.356
		250 MHz limit		0.224		0.191
		20 MHz limit		0.108		0.073
	20 mV/div	Full		0.538		0.607
		250 MHz limit		0.360		0.325
		20 MHz limit		0.162		0.137
	50 mV/div	Full		1.19		1.43
		250 MHz limit		0.803		0.763
		20 MHz limit		0.351		0.327
	100 mV/div	Full		2.45		3.56
		250 MHz limit		1.76		1.91
		20 MHz limit		0.780		0.779
	1 V/div	Full		26.3		23.8
		250 MHz limit		18.9		14.0
		20 MHz limit		8.46		6.05

[6] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 2 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [6]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 3	1 mV/div	Full		0.269		0.087
		250 MHz limit		0.152		0.087
		20 MHz limit		0.084		0.035
	2 mV/div	Full		0.290		0.125
		250 MHz limit		0.152		0.100
		20 MHz limit		0.086		0.037
	5 mV/div	Full		0.308		0.261
		250 MHz limit		0.172		0.140
		20 MHz limit		0.089		0.048
	10 mV/div	Full		0.359		0.356
		250 MHz limit		0.224		0.191
		20 MHz limit		0.108		0.073
	20 mV/div	Full		0.538		0.607
		250 MHz limit		0.360		0.325
		20 MHz limit		0.162		0.137
	50 mV/div	Full		1.19		1.43
		250 MHz limit		0.803		0.763
		20 MHz limit		0.351		0.327
	100 mV/div	Full		2.45		3.56
		250 MHz limit		1.76		1.91
		20 MHz limit		0.780		0.779
	1 V/div	Full		26.3		23.8
		250 MHz limit		18.9		14.0
		20 MHz limit		8.46		6.05

[6] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 2 GHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [6]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Channel 4	1 mV/div	Full		0.269		0.087
		250 MHz limit		0.152		0.087
		20 MHz limit		0.084		0.035
	2 mV/div	Full		0.290		0.125
		250 MHz limit		0.152		0.100
		20 MHz limit		0.086		0.037
	5 mV/div	Full		0.308		0.261
		250 MHz limit		0.172		0.140
		20 MHz limit		0.089		0.048
	10 mV/div	Full		0.359		0.356
		250 MHz limit		0.224		0.191
		20 MHz limit		0.108		0.073
	20 mV/div	Full		0.538		0.607
		250 MHz limit		0.360		0.325
		20 MHz limit		0.162		0.137
	50 mV/div	Full		1.19		1.43
		250 MHz limit		0.803		0.763
		20 MHz limit		0.351		0.327
	100 mV/div	Full		2.45		3.56
		250 MHz limit		1.76		1.91
		20 MHz limit		0.780		0.779
	1 V/div	Full		26.3		23.8
		250 MHz limit		18.9		14.0
		20 MHz limit		8.46		6.05

[6] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 2 GHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [6]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
MSO56 and MSO58 models:						
Channel 5	1 mV/div	Full		0.269		0.087
		250 MHz limit		0.152		0.087
		20 MHz limit		0.084		0.035
	2 mV/div	Full		0.290		0.125
		250 MHz limit		0.152		0.100
		20 MHz limit		0.086		0.037
	5 mV/div	Full		0.308		0.261
		250 MHz limit		0.172		0.140
		20 MHz limit		0.089		0.048
	10 mV/div	Full		0.359		0.356
		250 MHz limit		0.224		0.191
		20 MHz limit		0.108		0.073
	20 mV/div	Full		0.538		0.607
		250 MHz limit		0.360		0.325
		20 MHz limit		0.162		0.137
	50 mV/div	Full		1.19		1.43
		250 MHz limit		0.803		0.763
		20 MHz limit		0.351		0.327
	100 mV/div	Full		2.45		3.56
		250 MHz limit		1.76		1.91
		20 MHz limit		0.780		0.779
	1 V/div	Full		26.3		23.8
		250 MHz limit		18.9		14.0
		20 MHz limit		8.46		6.05

[6] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 2 GHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [6]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Channel 6	1 mV/div	Full		0.269		0.087
		250 MHz limit		0.152		0.087
		20 MHz limit		0.084		0.035
	2 mV/div	Full		0.290		0.125
		250 MHz limit		0.152		0.100
		20 MHz limit		0.086		0.037
	5 mV/div	Full		0.308		0.261
		250 MHz limit		0.172		0.140
		20 MHz limit		0.089		0.048
	10 mV/div	Full		0.359		0.356
		250 MHz limit		0.224		0.191
		20 MHz limit		0.108		0.073
	20 mV/div	Full		0.538		0.607
		250 MHz limit		0.360		0.325
		20 MHz limit		0.162		0.137
	50 mV/div	Full		1.19		1.43
		250 MHz limit		0.803		0.763
		20 MHz limit		0.351		0.327
	100 mV/div	Full		2.45		3.56
		250 MHz limit		1.76		1.91
		20 MHz limit		0.780		0.779
	1 V/div	Full		26.3		23.8
		250 MHz limit		18.9		14.0
		20 MHz limit		8.46		6.05

[6] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 2 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [6]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
MSO56 and MSO58 models:						
Channel 7	1 mV/div	Full		0.269		0.087
		250 MHz limit		0.152		0.087
		20 MHz limit		0.084		0.035
	2 mV/div	Full		0.290		0.125
		250 MHz limit		0.152		0.100
		20 MHz limit		0.086		0.037
	5 mV/div	Full		0.308		0.261
		250 MHz limit		0.172		0.140
		20 MHz limit		0.089		0.048
	10 mV/div	Full		0.359		0.356
		250 MHz limit		0.224		0.191
		20 MHz limit		0.108		0.073
	20 mV/div	Full		0.538		0.607
		250 MHz limit		0.360		0.325
		20 MHz limit		0.162		0.137
	50 mV/div	Full		1.19		1.43
		250 MHz limit		0.803		0.763
		20 MHz limit		0.351		0.327
	100 mV/div	Full		2.45		3.56
		250 MHz limit		1.76		1.91
		20 MHz limit		0.780		0.779
	1 V/div	Full		26.3		23.8
		250 MHz limit		18.9		14.0
		20 MHz limit		8.46		6.05

[6] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 2 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [6]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 8	1 mV/div	Full		0.269		0.087
		250 MHz limit		0.152		0.087
		20 MHz limit		0.084		0.035
	2 mV/div	Full		0.290		0.125
		250 MHz limit		0.152		0.100
		20 MHz limit		0.086		0.037
	5 mV/div	Full		0.308		0.261
		250 MHz limit		0.172		0.140
		20 MHz limit		0.089		0.048
	10 mV/div	Full		0.359		0.356
		250 MHz limit		0.224		0.191
		20 MHz limit		0.108		0.073
	20 mV/div	Full		0.538		0.607
		250 MHz limit		0.360		0.325
		20 MHz limit		0.162		0.137
	50 mV/div	Full		1.19		1.43
		250 MHz limit		0.803		0.763
		20 MHz limit		0.351		0.327
	100 mV/div	Full		2.45		3.56
		250 MHz limit		1.76		1.91
		20 MHz limit		0.780		0.779
	1 V/div	Full		26.3		23.8
		250 MHz limit		18.9		14.0
		20 MHz limit		8.46		6.05

[6] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 1 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [7]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 1	1 mV/div	Full		0.245		0.329
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.251		0.330
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.254		0.339
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.274		0.367
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.348		0.462
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.634		0.876
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.51		2.09
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		17.6		16.8
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[7] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 1 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [7]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 2	1 mV/div	Full		0.245		0.329
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.251		0.330
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.254		0.339
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.274		0.367
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.348		0.462
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.634		0.876
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.51		2.09
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		17.6		16.8
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[7] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 1 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [7]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 3	1 mV/div	Full		0.245		0.329
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.251		0.330
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.254		0.339
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.274		0.367
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.348		0.462
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.634		0.876
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.51		2.09
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		17.6		16.8
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[7] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 1 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [7]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 4	1 mV/div	Full		0.245		0.329
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.251		0.330
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.254		0.339
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.274		0.367
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.348		0.462
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.634		0.876
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.51		2.09
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		17.6		16.8
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[7] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 1 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [7]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
MSO56 and MSO58 models:						
Channel 5	1 mV/div	Full		0.245		0.329
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.251		0.330
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.254		0.339
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.274		0.367
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.348		0.462
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.634		0.876
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.51		2.09
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		17.6		16.8
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[7] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 1 GHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [7]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Channel 6	1 mV/div	Full		0.245		0.329
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.251		0.330
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.254		0.339
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.274		0.367
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.348		0.462
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.634		0.876
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.51		2.09
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		17.6		16.8
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[7] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 1 GHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [7]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
MSO56 and MSO58 models:						
Channel 7	1 mV/div	Full		0.245		0.329
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.251		0.330
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.254		0.339
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.274		0.367
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.348		0.462
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.634		0.876
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.51		2.09
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		17.6		16.8
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[7] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 1 GHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [7]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 8	1 mV/div	Full		0.245		0.329
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.251		0.330
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.254		0.339
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.274		0.367
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.348		0.462
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.634		0.876
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.51		2.09
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		17.6		16.8
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[7] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 500 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [8]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 1	1 mV/div	Full		0.245		0.256
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.251		0.256
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.254		0.262
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.274		0.282
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.348		0.354
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.634		0.667
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.51		1.60
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		17.6		12.8
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[8] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 500 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [8]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 2	1 mV/div	Full		0.245		0.256
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.251		0.256
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.254		0.262
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.274		0.282
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.348		0.354
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.634		0.667
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.51		1.60
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		17.6		12.8
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[8] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 500 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [8]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 3	1 mV/div	Full		0.245		0.256
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.251		0.256
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.254		0.262
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.274		0.282
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.348		0.354
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.634		0.667
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.51		1.60
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		17.6		12.8
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

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Random Noise, High Res mode: 500 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [8]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 4	1 mV/div	Full		0.245		0.256
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.251		0.256
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.254		0.262
		250 MHz limit		0.169		0.172
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	10 mV/div	Full		0.274		0.282
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.348		0.354
		250 MHz limit		0.289		0.288
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		250 MHz limit		0.621		0.595
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	100 mV/div	Full		1.51		1.60
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		17.6		12.8
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[8] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 500 MHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [8]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
MSO56 and MSO58 models:						
Channel 5	1 mV/div	Full		0.245		0.256
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.251		0.256
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.254		0.262
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.274		0.282
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.348		0.354
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.634		0.667
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.51		1.60
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		17.6		12.8
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[8] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 500 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [8]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 6	1 mV/div	Full		0.245		0.256
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.251		0.256
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.254		0.262
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.274		0.282
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.348		0.354
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.634		0.667
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.51		1.60
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		17.6		12.8
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[8] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 500 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [8]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
MSO56 and MSO58 models:						
Channel 7	1 mV/div	Full		0.245		0.256
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.251		0.256
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.254		0.262
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.274		0.282
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.348		0.354
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.634		0.667
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.51		1.60
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		17.6		12.8
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[8] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 500 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [8]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 8	1 mV/div	Full		0.245		0.256
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.251		0.256
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.254		0.262
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.274		0.282
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.348		0.354
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.634		0.667
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.51		1.60
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		17.6		12.8
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[8] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 350 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [9]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 1	1 mV/div	Full		0.184		0.329
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.188		0.185
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.197		0.195
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.216		0.218
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.277		0.287
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.530		0.564
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.25		1.31
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		13.7		10.9
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[9] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 350 MHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [9]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Channel 2	1 mV/div	Full		0.184		0.329
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.188		0.185
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.197		0.195
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.216		0.218
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.277		0.287
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.530		0.564
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.25		1.31
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		13.7		10.9
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[9] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 350 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [9]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 3	1 mV/div	Full		0.184		0.329
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.188		0.185
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.197		0.195
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.216		0.218
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.277		0.287
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.530		0.564
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.25		1.31
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		13.7		10.9
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[9] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 350 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [9]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 4	1 mV/div	Full		0.184		0.329
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.188		0.185
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.197		0.195
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.216		0.218
		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.277		0.287
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
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	1 V/div	Full		13.7		10.9
		250 MHz limit		14.4		11.6
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[9] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 350 MHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [9]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
MSO56 and MSO58 models:						
Channel 5	1 mV/div	Full		0.184		0.329
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.188		0.185
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.197		0.195
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		20 MHz limit		7.08		4.88

[9] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 350 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth** [9]	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 6	1 mV/div	Full		0.184		0.329
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.188		0.185
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.197		0.195
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
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		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.277		0.287
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.530		0.564
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.25		1.31
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		13.7		10.9
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[9] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 350 MHz models						
Performance checks			1 MΩ		50 Ω	
	V/div	Bandwidth [9]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
MSO56 and MSO58 models:						
Channel 7	1 mV/div	Full		0.184		0.329
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.188		0.185
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.197		0.195
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
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		250 MHz limit		0.200		0.205
		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.277		0.287
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		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.25		1.31
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		20 MHz limit		0.615		0.601
	1 V/div	Full		13.7		10.9
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[9] Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: 350 MHz models						
Performance checks			**1 MΩ**		**50 Ω**	
	V/div	**Bandwidth [9]**	**Test result (mV)**	**High limit (mV)**	**Test result (mV)**	**High limit (mV)**
Channel 8	1 mV/div	Full		0.184		0.329
		250 MHz limit		0.153		0.152
		20 MHz limit		0.084		0.091
	2 mV/div	Full		0.188		0.185
		250 MHz limit		0.156		0.157
		20 MHz limit		0.085		0.091
	5 mV/div	Full		0.197		0.195
		250 MHz limit		0.169		0.172
		20 MHz limit		0.090		0.094
	10 mV/div	Full		0.216		0.218
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		20 MHz limit		0.101		0.103
	20 mV/div	Full		0.277		0.287
		250 MHz limit		0.289		0.288
		20 MHz limit		0.135		0.132
	50 mV/div	Full		0.530		0.564
		250 MHz limit		0.621		0.595
		20 MHz limit		0.268		0.254
	100 mV/div	Full		1.25		1.31
		250 MHz limit		1.36		1.34
		20 MHz limit		0.615		0.601
	1 V/div	Full		13.7		10.9
		250 MHz limit		14.4		11.6
		20 MHz limit		7.08		4.88

[9] Full = the highest bandwidth setting you can select.

Long term sample rate through AFG DC offset accuracy test records

Long Term Sample Rate			
Performance checks	**Low limit**	**Test result**	**High limit**
Long Term Sample Rate	-2 divisions		+2 divisions

Delta Time Measurement Accuracy, 2 GHz models					
Performance checks					
All 2 GHz models					
Channel 1	**Sample rate = 25 GS/s, 10 ns/Div, Sample mode**				
	V/Div	**Source V_{rms}**	**Source freq**	**Test result**	**High limit**
	5 mV 1.5 GHz BW	40 mV	847.5 MHz		6.17 ps
	10 mV 2 GHz BW	80 mV	1.13 GHz		3.33 ps
	20 mV 2 GHz BW	160 mV	1.13 GHz		2.77 ps
	50 mV 2 GHz BW	400 mV	1.13 GHz		2.64 ps
	Sample rate = 25 GS/s, 10 ns/Div, High Res mode				
	5 mV 1 GHz BW	40 mV	565 MHz		5.79 ps
	10 mV 1 GHz BW	80 mV	565 MHz		4.125 ps
	20 mV 1 GHz BW	160 mV	565 MHz		3.6 ps
	50 mV 1 GHz BW	400 mV	565 MHz		3.42 ps

Delta Time Measurement Accuracy, 2 GHz models						
Channel 2	Sample rate = 25 GS/s, 10 ns/Div, Sample mode					
		5 mV 1.5 GHz BW	40 mV	847.5 MHz		6.17 ps
		10 mV 2 GHz BW	80 mV	1.13 GHz		3.33 ps
		20 mV 2 GHz BW	160 mV	1.13 GHz		2.77 ps
		50 mV 2 GHz BW	400 mV	1.13 GHz		2.64 ps
	Sample rate = 25 GS/s, 10 ns/Div, High Res mode					
		5 mV 1 GHz BW	40 mV	565 MHz		5.79 ps
		10 mV 1 GHz BW	80 mV	565 MHz		4.125 ps
		20 mV 1 GHz BW	160 mV	565 MHz		3.6 ps
		50 mV 1 GHz BW	400 mV	565 MHz		3.42 ps
Channel 3	Sample rate = 25 GS/s, 10 ns/Div, Sample mode					
		5 mV 1.5 GHz BW	40 mV	847.5 MHz		6.17 ps
		10 mV 2 GHz BW	80 mV	1.13 GHz		3.33 ps
		20 mV 2 GHz BW	160 mV	1.13 GHz		2.77 ps
		50 mV 2 GHz BW	400 mV	1.13 GHz		2.64 ps
	Sample rate = 25 GS/s, 10 ns/Div, High Res mode					
		5 mV 1 GHz BW	40 mV	565 MHz		5.79 ps
		10 mV 1 GHz BW	80 mV	565 MHz		4.125 ps
		20 mV 1 GHz BW	160 mV	565 MHz		3.6 ps
		50 mV 1 GHz BW	400 mV	565 MHz		3.42 ps

Delta Time Measurement Accuracy, 2 GHz models						
Channel 4	Sample rate = 25 GS/s, 10 ns/Div, Sample mode					
		5 mV 1.5 GHz BW	40 mV	847.5 MHz		6.17 ps
		10 mV 2 GHz BW	80 mV	1.13 GHz		3.33 ps
		20 mV 2 GHz BW	160 mV	1.13 GHz		2.77 ps
		50 mV 2 GHz BW	400 mV	1.13 GHz		2.64 ps
	Sample rate = 25 GS/s, 10 ns/Div, High Res mode					
		5 mV 1 GHz BW	40 mV	565 MHz		5.79 ps
		10 mV 1 GHz BW	80 mV	565 MHz		4.125 ps
		20 mV 1 GHz BW	160 mV	565 MHz		3.6 ps
		50 mV 1 GHz BW	400 mV	565 MHz		3.42 ps
2 GHz MSO56 and MSO58 models:						
	Sample rate = 25 GS/s, 10 ns/Div, Sample mode					
Channel 5		V/Div	Source V_{rms}	Source frequency	Test result	High limit
		5 mV 1.5 GHz BW	40 mV	847.5 MHz		6.17 ps
		10 mV 2 GHz BW	80 mV	1.13 GHz		3.33 ps
		20 mV 2 GHz BW	160 mV	1.13 GHz		2.77 ps
		50 mV 2 GHz BW	400 mV	1.13 GHz		2.64 ps
	Sample rate = 25 GS/s, 10 ns/Div, High Res mode					
		5 mV 1 GHz BW	40 mV	565 MHz		5.79 ps
		10 mV 1 GHz BW	80 mV	565 MHz		4.125 ps
		20 mV 1 GHz BW	160 mV	565 MHz		3.6 ps
		50 mV 1 GHz BW	400 mV	565 MHz		3.42 ps

Delta Time Measurement Accuracy, 2 GHz models						
Channel 6	Sample rate = 25 GS/s, 10 ns/Div, Sample mode					
		V/Div	Source V_{rms}	Source frequency	Test result	High limit
		5 mV 1.5 GHz BW	40 mV	847.5 MHz		6.17 ps
		10 mV 2 GHz BW	80 mV	1.13 GHz		3.33 ps
		20 mV 2 GHz BW	160 mV	1.13 GHz		2.77 ps
		50 mV 2 GHz BW	400 mV	1.13 GHz		2.64 ps
	Sample rate = 25 GS/s, 10 ns/Div, High Res mode					
		5 mV 1 GHz BW	40 mV	565 MHz		5.79 ps
		10 mV 1 GHz BW	80 mV	565 MHz		4.125 ps
		20 mV 1 GHz BW	160 mV	565 MHz		3.6 ps
		50 mV 1 GHz BW	400 mV	565 MHz		3.42 ps
2 GHz MSO58 models:						
Channel 7	Sample rate = 25 GS/s, 10 ns/Div, Sample mode					
		V/Div	Source V_{rms}	Source frequency	Test result	High limit
		5 mV 1.5 GHz BW	40 mV	847.5 MHz		6.17 ps
		10 mV 2 GHz BW	80 mV	1.13 GHz		3.33 ps
		20 mV 2 GHz BW	160 mV	1.13 GHz		2.77 ps
		50 mV 2 GHz BW	400 mV	1.13 GHz		2.64 ps
	Sample rate = 25 GS/s, 10 ns/Div, High Res mode					
		5 mV 1 GHz BW	40 mV	565 MHz		5.79 ps
		10 mV 1 GHz BW	80 mV	565 MHz		4.125 ps
		20 mV 1 GHz BW	160 mV	565 MHz		3.6 ps
		50 mV 1 GHz BW	400 mV	565 MHz		3.42 ps

Delta Time Measurement Accuracy, 2 GHz models					
Channel 8	Sample rate = 25 GS/s, 10 ns/Div, Sample mode				
	V/Div	Source V_{rms}	Source frequency	Test result	High limit
	5 mV 1.5 GHz BW	40 mV	847.5 MHz		6.17 ps
	10 mV 2 GHz BW	80 mV	1.13 GHz		3.33 ps
	20 mV 2 GHz BW	160 mV	1.13 GHz		2.77 ps
	50 mV 2 GHz BW	400 mV	1.13 GHz		2.64 ps
	Sample rate = 25 GS/s, 10 ns/Div, High Res mode				
	5 mV 1 GHz BW	40 mV	565 MHz		5.79 ps
	10 mV 1 GHz BW	80 mV	565 MHz		4.125 ps
	20 mV 1 GHz BW	160 mV	565 MHz		3.6 ps
	50 mV 1 GHz BW	400 mV	565 MHz		3.42 ps

Delta Time Measurement Accuracy, 1 GHz models					
Performance checks					
All 1 GHz models					
Channel 1	Sample rate = 25 GS/s, 10 ns/Div				
	V/Div	Source V_{rms}	Source frequency	Test result	High limit
	5 mV	40 mV	565 MHz		8.41 ps
	10 mV	80 mV	565 MHz		5.04 ps
	20 mV	160 mV	565 MHz		3.63 ps
	50 mV	400 mV	565 MHz		3.1 ps
	Sample rate = 25 GS/s, 10 ns/Div, High Res				
	5 mV	40 mV	565 MHz		7.3 ps
	10 mV	80 mV	565 MHz		4.22 ps
	20 mV	160 mV	565 MHz		2.88 ps
	50 mV	400 mV	565 MHz		2.33 ps

Delta Time Measurement Accuracy, 1 GHz models						
Channel 2	**Sample rate = 25 GS/s, 10 ns/Div**					
		V/Div	**Source V_{rms}**	**Source frequency**	**Test result**	**High limit**
		5 mV	40 mV	565 MHz		8.41 ps
		10 mV	80 mV	565 MHz		5.04 ps
		20 mV	160 mV	565 MHz		3.63 ps
		50 mV	400 mV	565 MHz		3.1 ps
	Sample rate = 25 GS/s, 10 ns/Div, High Res					
		5 mV	40 mV	565 MHz		7.3 ps
		10 mV	80 mV	565 MHz		4.22 ps
		20 mV	160 mV	565 MHz		2.88 ps
		50 mV	400 mV	565 MHz		2.33 ps
Channel 3	**Sample rate = 25 GS/s, 10 ns/Div**					
		V/Div	**Source V_{rms}**	**Source frequency**	**Test result**	**High limit**
		5 mV	40 mV	565 MHz		8.41 ps
		10 mV	80 mV	565 MHz		5.04 ps
		20 mV	160 mV	565 MHz		3.63 ps
		50 mV	400 mV	565 MHz		3.1 ps
	Sample rate = 25 GS/s, 10 ns/Div, High Res					
		5 mV	40 mV	565 MHz		7.3 ps
		10 mV	80 mV	565 MHz		4.22 ps
		20 mV	160 mV	565 MHz		2.88 ps
		50 mV	400 mV	565 MHz		2.33 ps
Channel 4	**Sample rate = 25 GS/s, 10 ns/Div**					
		V/Div	**Source V_{rms}**	**Source frequency**	**Test result**	**High limit**
		5 mV	40 mV	565 MHz		8.41 ps
		10 mV	80 mV	565 MHz		5.04 ps
		20 mV	160 mV	565 MHz		3.63 ps
		50 mV	400 mV	565 MHz		3.1 ps
	Sample rate = 25 GS/s, 10 ns/Div, High Res					
		5 mV	40 mV	565 MHz		7.3 ps
		10 mV	80 mV	565 MHz		4.22 ps
		20 mV	160 mV	565 MHz		2.88 ps
		50 mV	400 mV	565 MHz		2.33 ps

Delta Time Measurement Accuracy, 1 GHz models					
1 GHz MSO56 and MSO58 models:					
Channel 5	**Sample rate = 25 GS/s, 10 ns/Div**				
	V/Div	**Source V_{rms}**	**Source frequency**	**Test result**	**High limit**
	5 mV	40 mV	565 MHz		8.41 ps
	10 mV	80 mV	565 MHz		5.04 ps
	20 mV	160 mV	565 MHz		3.63 ps
	50 mV	400 mV	565 MHz		3.1 ps
	Sample rate = 25 GS/s, 10 ns/Div, High Res				
	5 mV	40 mV	565 MHz		7.3 ps
	10 mV	80 mV	565 MHz		4.22 ps
	20 mV	160 mV	565 MHz		2.88 ps
	50 mV	400 mV	565 MHz		2.33 ps
Channel 6	**Sample rate = 25 GS/s, 10 ns/Div**				
	V/Div	**Source V_{rms}**	**Source frequency**	**Test result**	**High limit**
	5 mV	40 mV	565 MHz		8.41 ps
	10 mV	80 mV	565 MHz		5.04 ps
	20 mV	160 mV	565 MHz		3.63 ps
	50 mV	400 mV	565 MHz		3.1 ps
	Sample rate = 25 GS/s, 10 ns/Div, High Res				
	5 mV	40 mV	565 MHz		7.3 ps
	10 mV	80 mV	565 MHz		4.22 ps
	20 mV	160 mV	565 MHz		2.88 ps
	50 mV	400 mV	565 MHz		2.33 ps
1 GHz MSO58 models:					
Channel 7	**Sample rate = 25 GS/s, 10 ns/Div**				
	V/Div	**Source V_{rms}**	**Source frequency**	**Test result**	**High limit**
	5 mV	40 mV	565 MHz		8.41 ps
	10 mV	80 mV	565 MHz		5.04 ps
	20 mV	160 mV	565 MHz		3.63 ps
	50 mV	400 mV	565 MHz		3.1 ps
	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 565 MHz, High Res				
	5 mV	40 mV	565 MHz		7.3 ps
	10 mV	80 mV	565 MHz		4.22 ps
	20 mV	160 mV	565 MHz		2.88 ps
	50 mV	400 mV	565 MHz		2.33 ps

Delta Time Measurement Accuracy, 1 GHz models						
Channel 8	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 565 MHz					
		V/Div	Source V_{rms}	Source frequency	Test result	High limit
		5 mV	40 mV	565 MHz		8.41 ps
		10 mV	80 mV	565 MHz		5.04 ps
		20 mV	160 mV	565 MHz		3.63 ps
		50 mV	400 mV	565 MHz		3.1 ps
	Sample rate = 25 GS/s, 10 ns/Div, High Res					
		5 mV	40 mV	565 MHz		7.3 ps
		10 mV	80 mV	565 MHz		4.22 ps
		20 mV	160 mV	565 MHz		2.88 ps
		50 mV	400 mV	565 MHz		2.33 ps

Delta Time Measurement Accuracy, 500 MHz models						
Performance checks						
All 500 MHz models:						
Channel 1	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 282.5 MHz, 500 MHz BW					
		V/Div	Source V_{rms}	Source frequency	Test result	High limit
		5 mV	40 mV	282.5 MHz		11.55 ps
		10 mV	80 mV	282.5 MHz		6.95 ps
		20 mV	160 mV	282.5 MHz		5.32 ps
		50 mV	400 mV	282.5 MHz		4.69 ps
	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 282.5 MHz, 500 MHz BW, High Res					
		5 mV	40 mV	282.5 MHz		10.85 ps
		10 mV	80 mV	282.5 MHz		6.48 ps
		20 mV	160 mV	282.5 MHz		3.97 ps
		50 mV	400 mV	282.5 MHz		3.23 ps
Channel 2	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 282.5 MHz, 500 MHz BW					
		V/Div	Source V_{rms}	Source frequency	Test result	High limit
		5 mV	40 mV	282.5 MHz		11.55 ps
		10 mV	80 mV	282.5 MHz		6.95 ps
		20 mV	160 mV	282.5 MHz		5.32 ps
		50 mV	400 mV	282.5 MHz		4.69 ps
	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 282.5 MHz, 500 MHz BW, High Res					
		5 mV	40 mV	282.5 MHz		10.85 ps
		10 mV	80 mV	282.5 MHz		6.48 ps
		20 mV	160 mV	282.5 MHz		3.97 ps
		50 mV	400 mV	282.5 MHz		3.23 ps

Delta Time Measurement Accuracy, 500 MHz models						
Channel 3	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 282.5 MHz, 500 MHz BW					
		V/Div	Source V_{rms}	Source frequency	Test result	High limit
		5 mV	40 mV	282.5 MHz		11.55 ps
		10 mV	80 mV	282.5 MHz		6.95 ps
		20 mV	160 mV	282.5 MHz		5.32 ps
		50 mV	400 mV	282.5 MHz		4.69 ps
	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 282.5 MHz, 500 MHz BW, High Res					
		5 mV	40 mV	282.5 MHz		10.85 ps
		10 mV	80 mV	282.5 MHz		6.48 ps
		20 mV	160 mV	282.5 MHz		3.97 ps
		50 mV	400 mV	282.5 MHz		3.23 ps
Channel 4	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 282.5 MHz, 500 MHz BW					
		V/Div	Source V_{rms}	Source frequency	Test result	High limit
		5 mV	40 mV	282.5 MHz		11.55 ps
		10 mV	80 mV	282.5 MHz		6.95 ps
		20 mV	160 mV	282.5 MHz		5.32 ps
		50 mV	400 mV	282.5 MHz		4.69 ps
	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 282.5 MHz, 500 MHz BW, High Res					
		5 mV	40 mV	282.5 MHz		10.85 ps
		10 mV	80 mV	282.5 MHz		6.48 ps
		20 mV	160 mV	282.5 MHz		3.97 ps
		50 mV	400 mV	282.5 MHz		3.23 ps
500 MHz MSO56 and MSO58 models:						
Channel 5	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 282.5 MHz, 500 MHz BW					
		V/Div	Source V_{rms}	Source frequency	Test result	High limit
		5 mV	40 mV	282.5 MHz		11.55 ps
		10 mV	80 mV	282.5 MHz		6.95 ps
		20 mV	160 mV	282.5 MHz		5.32 ps
		50 mV	400 mV	282.5 MHz		4.69 ps
	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 282.5 MHz, 500 MHz BW, High Res					
		5 mV	40 mV	282.5 MHz		10.85 ps
		10 mV	80 mV	282.5 MHz		6.48 ps
		20 mV	160 mV	282.5 MHz		3.97 ps
		50 mV	400 mV	282.5 MHz		3.23 ps

Delta Time Measurement Accuracy, 500 MHz models					
Channel 6	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 282.5 MHz, 500 MHz BW				
	V/Div	Source V_{rms}	Source frequency	Test result	High limit
	5 mV	40 mV	282.5 MHz		11.55 ps
	10 mV	80 mV	282.5 MHz		6.95 ps
	20 mV	160 mV	282.5 MHz		5.32 ps
	50 mV	400 mV	282.5 MHz		4.69 ps
	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 282.5 MHz, 500 MHz BW, High Res				
	5 mV	40 mV	282.5 MHz		10.85 ps
	10 mV	80 mV	282.5 MHz		6.48 ps
	20 mV	160 mV	282.5 MHz		3.97 ps
	50 mV	400 mV	282.5 MHz		3.23 ps
500 MHz MSO58 models:					
Channel 7	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 282.5 MHz, 500 MHz BW				
	V/Div	Source V_{rms}	Source frequency	Test result	High limit
	5 mV	40 mV	282.5 MHz		11.55 ps
	10 mV	80 mV	282.5 MHz		6.95 ps
	20 mV	160 mV	282.5 MHz		5.32 ps
	50 mV	400 mV	282.5 MHz		4.69 ps
	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 282.5 MHz, 500 MHz BW, High Res				
	5 mV	40 mV	282.5 MHz		10.85 ps
	10 mV	80 mV	282.5 MHz		6.48 ps
	20 mV	160 mV	282.5 MHz		3.97 ps
	50 mV	400 mV	282.5 MHz		3.23 ps
Channel 8	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 282.5 MHz, 500 MHz BW				
	V/Div	Source V_{rms}	Source frequency	Test result	High limit
	5 mV	40 mV	282.5 MHz		11.55 ps
	10 mV	80 mV	282.5 MHz		6.95 ps
	20 mV	160 mV	282.5 MHz		5.32 ps
	50 mV	400 mV	282.5 MHz		4.69 ps
	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 282.5 MHz, 500 MHz BW, High Res				
	5 mV	40 mV	282.5 MHz		10.85 ps
	10 mV	80 mV	282.5 MHz		6.48 ps
	20 mV	160 mV	282.5 MHz		3.97 ps
	50 mV	400 mV	282.5 MHz		3.23 ps

Delta Time Measurement Accuracy, 350 MHz models			
Performance checks			
All 350 MHz models:			

Delta Time Measurement Accuracy, 350 MHz models						
Channel 1	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 197.75 MHz, 350 MHz BW					
		V/Div	Source V_{rms}	Source frequency	Test result	High limit
		5 mV	40 mV	197.75 MHz		13.2 ps
		10 mV	80 mV	197.75 MHz		8.65 ps
		20 mV	160 mV	197.75 MHz		6.31 ps
		50 mV	400 mV	197.75 MHz		5.59 ps
	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 197.75 MHz, 350 MHz BW, High Res					
		5 mV	40 mV	197.75 MHz		11.78 ps
		10 mV	80 mV	197.75 MHz		6.84 ps
		20 mV	160 mV	197.75 MHz		4.7 ps
		50 mV	400 mV	197.75 MHz		3.82 ps
Channel 2	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 197.75 MHz, 350 MHz BW					
		V/Div	Source V_{rms}	Source frequency	Test result	High limit
		5 mV	40 mV	197.75 MHz		13.2 ps
		10 mV	80 mV	197.75 MHz		8.65 ps
		20 mV	160 mV	197.75 MHz		6.31 ps
		50 mV	400 mV	197.75 MHz		5.59 ps
	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 197.75 MHz, 350 MHz BW, High Res					
		5 mV	40 mV	197.75 MHz		11.78 ps
		10 mV	80 mV	197.75 MHz		6.84 ps
		20 mV	160 mV	197.75 MHz		4.7 ps
		50 mV	400 mV	197.75 MHz		3.82 ps
Channel 3	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 197.75 MHz, 350 MHz BW					
		V/Div	Source V_{rms}	Source frequency	Test result	High limit
		5 mV	40 mV	197.75 MHz		13.2 ps
		10 mV	80 mV	197.75 MHz		8.65 ps
		20 mV	160 mV	197.75 MHz		6.31 ps
		50 mV	400 mV	197.75 MHz		5.59 ps
	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 197.75 MHz, 350 MHz BW, High Res					
		5 mV	40 mV	197.75 MHz		11.78 ps
		10 mV	80 mV	197.75 MHz		6.84 ps
		20 mV	160 mV	197.75 MHz		4.7 ps
		50 mV	400 mV	197.75 MHz		3.82 ps

Delta Time Measurement Accuracy, 350 MHz models						
Channel 4	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 197.75 MHz, 350 MHz BW					
		V/Div	Source V_{rms}	Source frequency	Test result	High limit
		5 mV	40 mV	197.75 MHz		13.2 ps
		10 mV	80 mV	197.75 MHz		8.65 ps
		20 mV	160 mV	197.75 MHz		6.31 ps
		50 mV	400 mV	197.75 MHz		5.59 ps
	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 197.75 MHz, 350 MHz BW, High Res					
		5 mV	40 mV	197.75 MHz		11.78 ps
		10 mV	80 mV	197.75 MHz		6.84 ps
		20 mV	160 mV	197.75 MHz		4.7 ps
		50 mV	400 mV	197.75 MHz		3.82 ps
350 MHz MSO56 and MSO58 models:						
Channel 5	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 197.75 MHz, 350 MHz BW					
		V/Div	Source V_{rms}	Source frequency	Test result	High limit
		5 mV	40 mV	197.75 MHz		13.2 ps
		10 mV	80 mV	197.75 MHz		8.65 ps
		20 mV	160 mV	197.75 MHz		6.31 ps
		50 mV	400 mV	197.75 MHz		5.59 ps
	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 197.75 MHz, 350 MHz BW, High Res					
		5 mV	40 mV	197.75 MHz		11.78 ps
		10 mV	80 mV	197.75 MHz		6.84 ps
		20 mV	160 mV	197.75 MHz		4.7 ps
		50 mV	400 mV	197.75 MHz		3.82 ps
Channel 6	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 197.75 MHz, 350 MHz BW					
		V/Div	Source V_{rms}	Source frequency	Test result	High limit
		5 mV	40 mV	197.75 MHz		13.2 ps
		10 mV	80 mV	197.75 MHz		8.65 ps
		20 mV	160 mV	197.75 MHz		6.31 ps
		50 mV	400 mV	197.75 MHz		5.59 ps
	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 197.75 MHz, 350 MHz BW, High Res					
		5 mV	40 mV	197.75 MHz		11.78 ps
		10 mV	80 mV	197.75 MHz		6.84 ps
		20 mV	160 mV	197.75 MHz		4.7 ps
		50 mV	400 mV	197.75 MHz		3.82 ps

Delta Time Measurement Accuracy, 350 MHz models						
350 MHz MSO58 models:						
Channel 7	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 197.75 MHz, 350 MHz BW					
		V/Div	Source V_{rms}	Source frequency	Test result	High limit
		5 mV	40 mV	197.75 MHz		13.2 ps
		10 mV	80 mV	197.75 MHz		8.65 ps
		20 mV	160 mV	197.75 MHz		6.31 ps
		50 mV	400 mV	197.75 MHz		5.59 ps
	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 197.75 MHz, 350 MHz BW, High Res					
		5 mV	40 mV	197.75 MHz		11.78 ps
		10 mV	80 mV	197.75 MHz		6.84 ps
		20 mV	160 mV	197.75 MHz		4.7 ps
		50 mV	400 mV	197.75 MHz		3.82 ps
Channel 8	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 197.75 MHz, 350 MHz BW					
		V/Div	Source V_{rms}	Source frequency	Test result	High limit
		5 mV	40 mV	197.75 MHz		13.2 ps
		10 mV	80 mV	197.75 MHz		8.65 ps
		20 mV	160 mV	197.75 MHz		6.31 ps
		50 mV	400 mV	197.75 MHz		5.59 ps
	Sample rate = 25 GS/s, 10 ns/Div, Source freq = 197.75 MHz, 350 MHz BW, High Res					
		5 mV	40 mV	197.75 MHz		11.78 ps
		10 mV	80 mV	197.75 MHz		6.84 ps
		20 mV	160 mV	197.75 MHz		4.7 ps
		50 mV	400 mV	197.75 MHz		3.82 ps

Digital Threshold Accuracy, typical						
Performance checks:						
Digital channel	Threshold	V_{s-}	V_{s+}	Low limit	Test result	High limit
All models						
Channel 1						
D0	0 V			-0.1 V		0.1 V
D1	0 V			-0.1 V		0.1 V
D2	0 V			-0.1 V		0.1 V
D3	0 V			-0.1 V		0.1 V
D4	0 V			-0.1 V		0.1 V
D5	0 V			-0.1 V		0.1 V
D6	0 V			-0.1 V		0.1 V
D7	0 V			-0.1 V		0.1 V

Digital Threshold Accuracy, typical						
Performance checks:						
Digital channel	**Threshold**	**V_{s-}**	**V_{s+}**	**Low limit**	**Test result**	**High limit**
Channel 2						
D0	0 V			-0.1 V		0.1 V
D1	0 V			-0.1 V		0.1 V
D2	0 V			-0.1 V		0.1 V
D3	0 V			-0.1 V		0.1 V
D4	0 V			-0.1 V		0.1 V
D5	0 V			-0.1 V		0.1 V
D6	0 V			-0.1 V		0.1 V
D7	0 V			-0.1 V		0.1 V
Channel 3						
D0	0 V			-0.1 V		0.1 V
D1	0 V			-0.1 V		0.1 V
D2	0 V			-0.1 V		0.1 V
D3	0 V			-0.1 V		0.1 V
D4	0 V			-0.1 V		0.1 V
D5	0 V			-0.1 V		0.1 V
D6	0 V			-0.1 V		0.1 V
D7	0 V			-0.1 V		0.1 V
Channel 4						
D0	0 V			-0.1 V		0.1 V
D1	0 V			-0.1 V		0.1 V
D2	0 V			-0.1 V		0.1 V
D3	0 V			-0.1 V		0.1 V
D4	0 V			-0.1 V		0.1 V
D5	0 V			-0.1 V		0.1 V
D6	0 V			-0.1 V		0.1 V
D7	0 V			-0.1 V		0.1 V
MSO56 and MSO58 models						
Channel 5						
D0	0 V			-0.1 V		0.1 V
D1	0 V			-0.1 V		0.1 V
D2	0 V			-0.1 V		0.1 V
D3	0 V			-0.1 V		0.1 V
D4	0 V			-0.1 V		0.1 V
D5	0 V			-0.1 V		0.1 V
D6	0 V			-0.1 V		0.1 V

Digital Threshold Accuracy, typical						
Performance checks:						
Digital channel	**Threshold**	**V_{s-}**	**V_{s+}**	**Low limit**	**Test result**	**High limit**
D7	0 V			-0.1 V		0.1 V
Channel 6						
D0	0 V			-0.1 V		0.1 V
D1	0 V			-0.1 V		0.1 V
D2	0 V			-0.1 V		0.1 V
D3	0 V			-0.1 V		0.1 V
D4	0 V			-0.1 V		0.1 V
D5	0 V			-0.1 V		0.1 V
D6	0 V			-0.1 V		0.1 V
D7	0 V			-0.1 V		0.1 V
MSO58 models						
Channel 7						
D0	0 V			-0.1 V		0.1 V
D1	0 V			-0.1 V		0.1 V
D2	0 V			-0.1 V		0.1 V
D3	0 V			-0.1 V		0.1 V
D4	0 V			-0.1 V		0.1 V
D5	0 V			-0.1 V		0.1 V
D6	0 V			-0.1 V		0.1 V
D7	0 V			-0.1 V		0.1 V
Channel 8						
D0	0 V			-0.1 V		0.1 V
D1	0 V			-0.1 V		0.1 V
D2	0 V			-0.1 V		0.1 V
D3	0 V			-0.1 V		0.1 V
D4	0 V			-0.1 V		0.1 V
D5	0 V			-0.1 V		0.1 V
D6	0 V			-0.1 V		0.1 V
D7	0 V			-0.1 V		0.1 V

AUX Out output voltage levels				
Performance checks	**Vout**	**Low limit**	**Test result**	**High limit**
Output levels, 1 MΩ input impedance	Max	≥ 2.5 V		n/a
	Min	n/a		≤ 700 mV
Output levels, 50 Ω Input Impedance,	Max	≥ 1.0 V		n/a
	Min	n/a		≤ 250 mV

DVM voltage accuracy (DC)					
Channel 1					
Vertical Scale	Input Voltage	Offset Voltage	Low limit	Test result	High limit
1	–5	–5	-5.125		-4.875
0.5	–2	–2	-2.06		-1.94
0.5	–1	–0.5	-1.06		-0.94
0.2	–0.5	–0.5	-0.5225		-0.4775
0.01	0.002	0	0.00097		0.00303
0.2	0.5	0.5	0.4775		0.5225
0.5	1	0.5	0.94		1.06
0.5	2	2	1.94		2.06
1	5	5	4.875		5.125
Channel 2					
Vertical Scale	Input Voltage	Offset Voltage	Low limit	Test result	High limit
1	–5	–5	-5.125		-4.875
0.5	–2	–2	-2.06		-1.94
0.5	–1	–0.5	-1.06		-0.94
0.2	–0.5	–0.5	-0.5225		-0.4775
0.01	0.002	0	0.00097		0.00303
0.2	0.5	0.5	0.4775		0.5225
0.5	1	0.5	0.94		1.06
0.5	2	2	1.94		2.06
1	5	5	4.875		5.125
Channel 3					
Vertical Scale	Input Voltage	Offset Voltage	Low limit	Test result	High limit
1	-5	-5	-5.125		-4.875
0.5	-2	-2	-2.06		-1.94
0.5	-1	-0.5	-1.06		-0.94
0.2	-0.5	-0.5	-0.5225		-0.4775
0.01	0.002	0	0.00097		0.00303
0.2	0.5	0.5	0.4775		0.5225

DVM voltage accuracy (DC)					
0.5	1	0.5	0.94		1.06
0.5	2	2	1.94		2.06
1	5	5	4.875		5.125
Channel 4					
Vertical Scale	Input Voltage	Offset Voltage	Low limit	Test result	High limit
1	-5	-5	-5.125		-4.875
0.5	-2	-2	-2.06		-1.94
0.5	–1	-0.5	-1.06		-0.94
0.2	-0.5	-0.5	-0.5225		-0.4775
0.01	0.002	0	0.00097		0.00303
0.2	0.5	0.5	0.4775		0.5225
0.5	1	0.5	0.94		1.06
0.5	2	2	1.94		2.06
1	5	5	4.875		5.125
Channel 5					
Vertical Scale	Input Voltage	Offset Voltage	Low limit	Test result	High limit
1	-5	-5	-5.125		-4.875
0.5	-2	-2	-2.06		-1.94
0.5	-1	-0.5	-1.06		-0.94
0.2	-0.5	-0.5	-0.5225		-0.4775
0.01	0.002	0	0.00097		0.00303
0.2	0.5	0.5	0.4775		0.5225
0.5	1	0.5	0.94		1.06
0.5	2	2	1.94		2.06
1	5	5	4.875		5.125
Channel 6					
Vertical Scale	Input Voltage	Offset Voltage	Low limit	Test result	High limit
1	-5	-5	-5.125		-4.875
0.5	-2	-2	-2.06		-1.94
0.5	-1	-0.5	-1.06		-0.94
0.2	-0.5	-0.5	-0.5225		-0.4775
0.01	0.002	0	0.00097		0.00303
0.2	0.5	0.5	0.4775		0.5225
0.5	1	0.5	0.94		1.06
0.5	2	2	1.94		2.06
1	5	5	4.875		5.125
Channel 7					
Vertical Scale	Input Voltage	Offset Voltage	Low limit	Test result	High limit

DVM voltage accuracy (DC)					
1	-5	-5	-5.125		-4.875
0.5	-2	-2	-2.06		-1.94
0.5	-1	-0.5	-1.06		-0.94
0.2	-0.5	-0.5	-0.5225		-0.4775
0.01	0.002	0	0.00097		0.00303
0.2	0.5	0.5	0.4775		0.5225
0.5	1	0.5	0.94		1.06
0.5	2	2	1.94		2.06
1	5	5	4.875		5.125
Channel 8					
Vertical Scale	Input Voltage	Offset Voltage	Low limit	Test result	High limit
1	-5	-5	-5.125		-4.875
0.5	-2	-2	-2.06		-1.94
0.5	-1	-0.5	-1.06		-0.94
0.2	-0.5	-0.5	-0.5225		-0.4775
0.01	0.002	0	0.00097		0.00303
0.2	0.5	0.5	0.4775		0.5225
0.5	1	0.5	0.94		1.06
0.5	2	2	1.94		2.06
1	5	5	4.875		5.125

DVM voltage accuracy (AC)				
Channel 1				
Vertical Scale	Input Signal	Low limit	Test result	High limit
5 mV	20 mV_{pp} at 1 kHz	9.800 mV		10.200 mV
10 mV	50 mV_{pp} at 1 kHz	24.5 mV		25.500 mV
100 mV	0.5 V_{pp} at 1 kHz	245.000 mV		255.000 mV
200 mV	1 V_{pp} at 1 kHz	490.000 mV		510.000 mV
1 V	5 V_{pp} at 1 kHz	2.450 mV		2.550 mV
Channel 2				
Vertical Scale	Input Signal	Low limit	Test result	High limit
5 mV	20 mV_{pp} at 1 kHz	9.800 mV		10.200 mV
10 mV	50 mV_{pp} at 1 kHz	24.5 mV		25.500 mV
100 mV	0.5 V_{pp} at 1 kHz	245.000 mV		255.000 mV
200 mV	1 V_{pp} at 1 kHz	490.000 mV		510.000 mV
1 V	5 V_{pp} at 1 kHz	2.450 mV		2.550 mV
Channel 3				

DVM voltage accuracy (AC)				
Vertical Scale	Input Signal	Low limit	Test result	High limit
5 mV	20 mV_{pp} at 1 kHz	9.800 mV		10.200 mV
10 mV	50 mV_{pp} at 1 kHz	24.5 mV		25.500 mV
100 mV	0.5 V_{pp} at 1 kHz	245.000 mV		255.000 mV
200 mV	1 V_{pp} at 1 kHz	490.000 mV		510.000 mV
1 V	5 V_{pp} at 1 kHz	2.450 mV		2.550 mV
Channel 4				
Vertical Scale	Input Signal	Low limit	Test result	High limit
5 mV	20 mV_{pp} at 1 kHz	9.800 mV		10.200 mV
10 mV	50 mV_{pp} at 1 kHz	24.5 mV		25.500 mV
100 mV	0.5 V_{pp} at 1 kHz	245.000 mV		255.000 mV
200 mV	1 V_{pp} at 1 kHz	490.000 mV		510.000 mV
1 V	5 V_{pp} at 1 kHz	2.450 mV		2.550 mV
MSO56, MSO58 models				
Channel 5				
Vertical Scale	Input Signal	Low limit	Test result	High limit
5 mV	20 mV_{pp} at 1 kHz	9.800 mV		10.200 mV
10 mV	50 mV_{pp} at 1 kHz	24.5 mV		25.500 mV
100 mV	0.5 V_{pp} at 1 kHz	245.000 mV		255.000 mV
200 mV	1 V_{pp} at 1 kHz	490.000 mV		510.000 mV
1 V	5 V_{pp} at 1 kHz	2.450 mV		2.550 mV
Channel 6				
Vertical Scale	Input Signal	Low limit	Test result	High limit
5 mV	20 mV_{pp} at 1 kHz	9.800 mV		10.200 mV
10 mV	50 mV_{pp} at 1 kHz	24.5 mV		25.500 mV
100 mV	0.5 V_{pp} at 1 kHz	245.000 mV		255.000 mV
200 mV	1 V_{pp} at 1 kHz	490.000 mV		510.000 mV
1 V	5 V_{pp} at 1 kHz	2.450 mV		2.550 mV
MSO58 models				
Channel 7				
Vertical Scale	Input Signal	Low limit	Test result	High limit
5 mV	20 mV_{pp} at 1 kHz	9.800 mV		10.200 mV
10 mV	50 mV_{pp} at 1 kHz	24.5 mV		25.500 mV
100 mV	0.5 V_{pp} at 1 kHz	245.000 mV		255.000 mV
200 mV	1 V_{pp} at 1 kHz	490.000 mV		510.000 mV
1 V	5 V_{pp} at 1 kHz	2.450 mV		2.550 mV
Channel 8				
Vertical Scale	Input Signal	Low limit	Test result	High limit

DVM voltage accuracy (AC)				
5 mV	20 mV_{pp} at 1 kHz	9.800 mV		10.200 mV
10 mV	50 mV_{pp} at 1 kHz	24.5 mV		25.500 mV
100 mV	0.5 V_{pp} at 1 kHz	245.000 mV		255.000 mV
200 mV	1 V_{pp} at 1 kHz	490.000 mV		510.000 mV
1 V	5 V_{pp} at 1 kHz	2.450 mV		2.550 mV

Trigger frequency accuracy and trigger frequency counter maximum input frequency				
Channel 1				
	Hz	Low limit	Test result	High limit
	100 Hz	99.99974 Hz		100.00026 Hz
	1 kHz	999.9974 Hz		1.0000026 KHz
	10 kHz	9.999974 KHz		10.000026 kHz
	100 kHz	99.99974 kHz		100.00026 kHz
	1 MHz	999.9974 kHz		1.0000026 MHz
	10 MHz	9.999974 kHz		10.000026 MHz
	100 MHz	99.99974 MHz		100.00026 MHz
	1 GHz	999.9974 MHz		1.0000026 GHz
	2 GHz	1.999994 GHz		2.0000051 GHz
Channel 2				
	Hz	Low limit	Test result	High limit
	100 Hz	99.99974 Hz		100.00026 Hz
	1 kHz	999.9974 Hz		1.0000026 KHz
	10 kHz	9.999974 KHz		10.000026 kHz
	100 kHz	99.99974 kHz		100.00026 kHz
	1 MHz	999.9974 kHz		1.0000026 MHz
	10 MHz	9.999974 kHz		10.000026 MHz
	100 MHz	99.99974 MHz		100.00026 MHz
	1 GHz	999.9974 MHz		1.0000026 GHz
	2 GHz	1.999994 GHz		2.0000051 GHz
Channel 3				

Trigger frequency accuracy and trigger frequency counter maximum input frequency				
	Hz	Low limit	Test result	High limit
	100 Hz	99.99974 Hz		100.00026 Hz
	1 kHz	999.9974 Hz		1.0000026 KHz
	10 kHz	9.999974 KHz		10.000026 kHz
	100 kHz	99.99974 kHz		100.00026 kHz
	1 MHz	999.9974 kHz		1.0000026 MHz
	10 MHz	9.999974 kHz		10.000026 MHz
	100 MHz	99.99974 MHz		100.00026 MHz
	1 GHz	999.9974 MHz		1.0000026 GHz
	2 GHz	1.999994 GHz		2.0000051 GHz
Channel 4				
	Hz	Low limit	Test result	High limit
	100 Hz	99.99974 Hz		100.00026 Hz
	1 kHz	999.9974 Hz		1.0000026 KHz
	10 kHz	9.999974 KHz		10.000026 kHz
	100 kHz	99.99974 kHz		100.00026 kHz
	1 MHz	999.9974 kHz		1.0000026 MHz
	10 MHz	9.999974 kHz		10.000026 MHz
	100 MHz	99.99974 MHz		100.00026 MHz
	1 GHz	999.9974 MHz		1.0000026 GHz
	2 GHz	1.999994 GHz		2.0000051 GHz
Channel 5				
	Hz	Low limit	Test result	High limit
	100 Hz	99.99974 Hz		100.00026 Hz
	1 kHz	999.9974 Hz		1.0000026 KHz
	10 kHz	9.999974 KHz		10.000026 kHz
	100 kHz	99.99974 kHz		100.00026 kHz
	1 MHz	999.9974 kHz		1.0000026 MHz
	10 MHz	9.999974 kHz		10.000026 MHz
	100 MHz	99.99974 MHz		100.00026 MHz
	1 GHz	999.9974 MHz		1.0000026 GHz
	2 GHz	1.999994 GHz		2.0000051 GHz
Channel 6				

Trigger frequency accuracy and trigger frequency counter maximum input frequency				
	Hz	Low limit	Test result	High limit
	100 Hz	99.99974 Hz		100.00026 Hz
	1 kHz	999.9974 Hz		1.0000026 KHz
	10 kHz	9.999974 KHz		10.000026 kHz
	100 kHz	99.99974 kHz		100.00026 kHz
	1 MHz	999.9974 kHz		1.0000026 MHz
	10 MHz	9.999974 kHz		10.000026 MHz
	100 MHz	99.99974 MHz		100.00026 MHz
	1 GHz	999.9974 MHz		1.0000026 GHz
	2 GHz	1.999994 GHz		2.0000051 GHz
Channel 7				
	Hz	Low limit	Test result	High limit
	100 Hz	99.99974 Hz		100.00026 Hz
	1 kHz	999.9974 Hz		1.0000026 KHz
	10 kHz	9.999974 KHz		10.000026 kHz
	100 kHz	99.99974 kHz		100.00026 kHz
	1 MHz	999.9974 kHz		1.0000026 MHz
	10 MHz	9.999974 kHz		10.000026 MHz
	100 MHz	99.99974 MHz		100.00026 MHz
	1 GHz	999.9974 MHz		1.0000026 GHz
	2 GHz	1.999994 GHz		2.0000051 GHz
Channel 8				
	Hz	Low limit	Test result	High limit
	100 Hz	99.99974 Hz		100.00026 Hz
	1 kHz	999.9974 Hz		1.0000026 KHz
	10 kHz	9.999974 KHz		10.000026 kHz
	100 kHz	99.99974 kHz		100.00026 kHz
	1 MHz	999.9974 kHz		1.0000026 MHz
	10 MHz	9.999974 kHz		10.000026 MHz
	100 MHz	99.99974 MHz		100.00026 MHz
	1 GHz	999.9974 MHz		1.0000026 GHz
	2 GHz	1.999994 GHz		2.0000051 GHz

AFG sine and ramp frequency accuracy				
Performance checks				
	Waveform type	**Minimum**	**Test result**	**Maximum**
	Sine	0.999950 MHz		1.000050 MHz
	Ramp	499.975 kHz		500.025 kHz

AFG square and pulse frequency accuracy				
Performance checks				
	Waveform type	**Minimum**	**Test result**	**Maximum**
	Square	0.999950 MHz		1.000050 MHz
	Pulse	0.999950 MHz		1.000050 MHz

AFG signal amplitude accuracy				
Performance checks				
	Amplitude	**Minimum**	**Test result**	**Maximum**
	30.0 mV_{PP}	28.55 mV_{PP}		31.45 mV_{PP}
	300.0 mV_{PP}	294.5 mV_{PP}		305.5 mV_{PP}
	800.0 mV_{PP}	787.0 mV_{PP}		813.0 mV_{PP}
	1.500 V_{PP}	1.4765 V_{PP}		1.5235 V_{PP}
	2.000 V_{PP}	1.9690 V_{PP}		2.0310 V_{PP}
	2.500 V_{PP}	2.4615 V_{PP}		2.5385 V_{PP}

AFG DC offset accuracy				
Performance checks				
	Offset	**Minimum**	**Test result**	**Maximum**
	1.25 V	1.23025 Vdc		1.26975 Vdc
	0 V	- 0.001 Vdc		+ 0.001 Vdc
	-1.25 V	- 1.26975 Vdc		- 1.23025 Vdc

Performance tests

This section contains a collection of manual procedures for checking that the instrument performs as warranted. They check all the characteristics that are designated as checked in *Specifications*. (The characteristics that are checked appear with a ✓ in *Specifications*).

Prerequisites

The tests in this section comprise an extensive, valid confirmation of performance and functionality when the following requirements are met:

- The instrument must be in its normal operating configuration (no covers removed).
- You must have performed and passed the procedures under *Self Test*. (See *Self test* on page 178.)
- A signal-path compensation must have been done within the recommended calibration interval and at a temperature within ±5 ºC (±9 ºF) of the present operating temperature. (If the temperature was within the limits just stated at the time you did the prerequisite *Self Test,* consider this prerequisite met). A signal-path compensation must have been done at an ambient humidity within 25% of the current ambient humidity and after having been at that humidity for at least 4 hours.
- The instrument must have been last adjusted at an ambient temperature between +18 ºC and +28 ºC (+64 ºF and +82 ºF), must have been operating for a warm-up period of at least 20 minutes, and must be operating at an ambient temperature as listed in the specifications. (See *Environmental specifications* on page 29.) (The warm-up requirement is usually met in the course of meeting the Self Test prerequisites listed above).
- The instrument must be powered from a source maintaining voltage and frequency within the limits described in the *Specifications* section.
- The instrument must be in an environment with temperature, altitude, humidity, and vibration within the operating limits described in the *Specifications* section.

Self test

This procedure verifies that the instrument passes the internal diagnostics and performs signal path compensation. No test equipment or hookups are required.

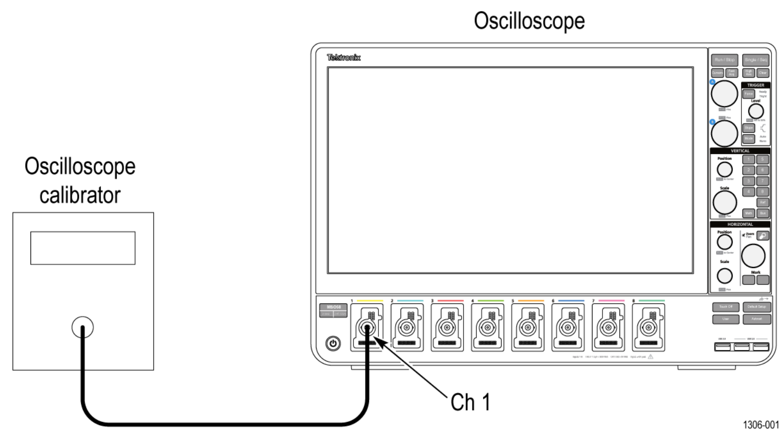
Equipment required	Prerequisites
None	Power on the instrument and allow a 20 minute warm-up period before performing this procedure.

1. *Run the System Diagnostics (may take a few minutes):*
   a. Disconnect all probes and/or cables from the oscilloscope inputs.
   b. Tap **Utility** > **Self Test**. This displays the Self Test configuration menu.
   c. Tap the **Run Self Test** button.
   d. Wait. The internal diagnostics perform an exhaustive verification of proper instrument function. This verification may take several minutes. When the verification is finished, the resulting status will appear in the Self Test configuration menu.
   e. Verify that the status of all tests is **Passed**.
   f. Tap anywhere outside the menu to exit the Self test menu.
2. *Run the signal-path compensation routine (may take 5 to 15 minutes per channel):*
   a. Tap **Utility** > **Calibration**. This displays the instrument Calibration configuration menu.
   b. Tap the **Run SPC** button to start the routine.
   c. Wait. Signal-path compensation may take 5 to 15 minutes to run per channel.
   d. Verify that the SPC **Status** is **Passed**.
3. *Return to regular service:* Tap anywhere outside the menu to exit the Calibration configuration menu.

Check input impedance

This test checks the Input Impedance.

1. Connect the output of the oscilloscope calibrator (for example, Fluke 9500) to the oscilloscope channel 1 input, as shown in the following illustration.



WARNING. *The generator is capable of providing dangerous voltages. Be sure to set the generator to off or 0 volts before connecting, disconnecting, and/or moving the test hookup during the performance of this procedure.*

2. Push the front-panel **Default Setup** button.
3. *Set the impedance to 1 MΩ as follows:*
   a. Set the calibrator impedance to **1 MΩ**.
   b. Tap the channel 1 button on the oscilloscope Settings bar.
   c. Double tap the channel 1 badge to open the menu.
   d. Set the Vertical **Scale** to **10 mV/div**.

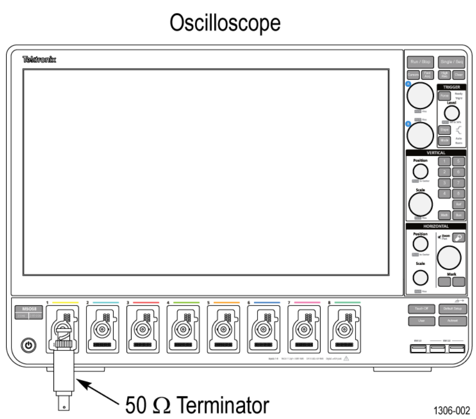
   NOTE. *Impedance measuring equipment that produce a voltage across the channel that exceeds the measurement range of the instrument may report erroneous impedance results. A measurement voltage exceeds the measurement range of the instrument when the resulting trace is not visible on the graticule because of the measurement voltage amplitude.*

   e. Set the **Termination** to **1 MΩ**.
4. Use the calibrator to measure the input impedance of the oscilloscope and enter the value in the test record.
5. Repeat steps 3.d and 4 for all vertical scale settings in the test record.

6. *Repeat the tests at 50 Ω as follows:*
   a. Set the calibrator impedance to 50 Ω.
   b. Double-tap the channel badge of the channel you are testing and set the channel termination to 50 Ω.
   c. Repeat steps 3.d through 5.
7. *Repeat the procedure for all remaining channels as follows:*
   a. Push the front-panel button to deselect the channel that you have already tested.
   b. Push the front-panel button to open or select the next channel to be tested.
   c. Move the calibrator connection to the next channel to be tested.
   d. Starting from step 3, repeat the procedure until all channels have been tested.
8. Tap outside the configuration menu to close the menu.

Check DC balance

This test checks the DC balance. You do not need to connect any test equipment (other than the 50 Ω terminator) to the oscilloscope to perform this check.



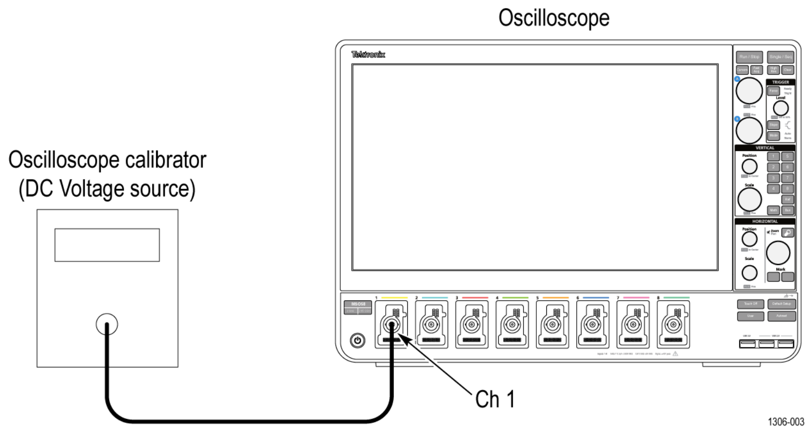
1. Attach a 50 Ω terminator to the oscilloscope channel 1 input.
2. Push the front-panel **Default Setup** button.
3. Set the Horizontal **Scale** to **1 ms/division**.
4. Double-tap the Channel 1 badge to open its Configuration menu.
5. Set the channel 1 termination to **50 Ω**.
6. Set the **Bandwidth Limit** to **20 MHz**

7. Tap outside the menu to close it.
8. Double-tap the **Acquisition** badge and set the Acquisition mode to **Average**.
9. Set the **number of averages** to **16**.
10. Double-tap the **Trigger** badge and set the trigger **Source** to **AC line**.
11. Use the front-panel controls to set the Vertical **Scale** to **1 mV/div** for the . channel under test.
12. Add a Mean amplitude measurement for channel 1 to the Results bar:
    a. Tap the **Measure** button to open the Add Measurements menu.
    b. In the Amplitude Measurements panel, double-tap the **Mean** measurement button to add the Mean measurement badge to the Results bar.
13. Enter the mean value as the test result in the test record.
14. Repeat steps 11 through 13 for each vertical scale setting in the test record.
15. Repeat steps 3 through 14 for each bandwidth setting in the test record table.
16. *Repeat the tests at 1 MΩ impedance as follows:*
    a. Double-tap the channel 1 badge.
    b. Set the **Termination** to **1M Ω**.
    c. Repeat steps 6 through 15.
17. *Repeat the procedure for all remaining channels as follows:*
    a. Push the front-panel button to deselect the channel that you have already tested.
    b. Push the front-panel button to select the next channel to be tested.
    c. Move the 50 Ω terminator to the channel input to be tested.
    d. Starting from step 5, repeat the procedures until all channels have been tested. To change the source for the Mean measurement for each channel test:
        a. Double-tap the **Mean** measurement badge.
        b. Tap the **Configure** panel.
        c. Tap the **Source 1** field and select the next channel to test from the drop-down list.
18. Tap outside the menu area to close the configuration menu.

Check DC gain accuracy

This test checks the DC gain accuracy.

1. Connect the oscilloscope to a DC voltage source. If you are using the Fluke 9500 calibrator, connect the calibrator head to the oscilloscope channel to test.



WARNING. *The generator is capable of providing dangerous voltages. Be sure to set the generator to off or 0 volts before connecting, disconnecting, and/or moving the test hookup during the performance of this procedure.*

2. Push the front-panel **Default Setup** button.
3. Push the front-panel channel 1 button.
4. Double-tap the channel 1 badge to open its menu.
5. Set the input impedance to **50 Ω**.
6. Set the **Bandwidth Limit** to **20 MHz**.
7. Double-tap the Acquisition badge and set the Acquisition mode to **Average**.
8. Ensure that the **Number of Waveforms** is set to **16**.
9. Double-tap the Trigger badge and set the trigger source to **AC line**.
10. Use the front-panel Vertical **Scale** control to set the vertical scale to **1 mV/div**.
11. Add the **Mean** measurement to the Results bar:
    a. Tap the **Measure** button to open the Add Measurements menu.
    b. In the Amplitude Measurements panel, double-tap the **Mean** button to add a Mean measurement badge to the Results bar.
    c. Tap the **Clear** front-panel button to reset the measurement statistics.
    d. View the **Mean** measurement value in the badge.

12. *Record the negative-measured and positive-measured mean readings in the worksheet as follows:*

   a. On the calibrator, set the DC Voltage Source to $V_{negative}$ value as listed in the table.

   b. Tap the **Clear** front-panel button to reset the measurement statistics.

   c. View the **Mean** measurement value.

   d. Enter the mean reading in the worksheet as $V_{negative-measured}$. (See *Table 1: Gain expected worksheet* on page 183.)

   e. On the calibrator, set the DC Voltage Source to $V_{positive}$ value as listed in the table.

   f. Tap the **Clear** front-panel button to reset the measurement statistics.

   g. View the **Mean** measurement value.

   h. Enter the mean reading in the worksheet as $V_{positive-measured}$.

Table 1: Gain expected worksheet

Oscilloscope Vertical Scale Setting	$V_{diffExpected}$	$V_{negative}$	$V_{positive}$	$V_{negative-measured}$	$V_{positive-measured}$	V_{diff}	Test Result (Gain Accuracy)
1 mV/div	9 mV	-4.5 mV	+4.5 mV				
2 mV/div	18 mV	-9 mV	+9 mV				
5 mV/div	45 mV	-22.5 mV	+22.5 mV				
10 mV/div	90 mV	-45 mV	+45 mV				
20 mV/div	180 mV	-90 mV	+90 mV				
50 mV/div	450 mV	-225 mV	+225 mV				
100 mV/div	900 mV	-450 mV	+450 mV				
200 mV/div	1800 mV	-900 mV	+900 mV				
500 mV/div	4900 mV	-2450 mV	+2450 mV				
1.0 V/div	9000 mV	-4500 mV	+4500 mV				
20 mV/div at 250 MHz	180 mV	-90 mV	+90 mV				
20 mV/div at Full bandwidth	180 mV	-90 mV	+90 mV				

13. *Record Gain Accuracy as follows:*

   a. Calculate *Vdiff*as follows:

   Vdiff= | *Vnegative-measured*- *Vpositive-measured* |

   b. Enter *Vdiff* in the worksheet. (See *Table 1: Gain expected worksheet* on page 183.)

   c. Calculate *Gain Accuracy* as follows:

   Gain Accuracy = ((*Vdiff*- *VdiffExpected*)/*VdiffExpected*) × 100%

   d. Enter *Gain Accuracy* in the worksheet and in the test record.

14. *Repeat tests at 1 MΩ impedance as follows:*

   a. Set the calibrator to **1 MΩ** output.

   b. Double-tap the channel badge.

   c. Set the **Termination** to **1 MΩ**

   d. Repeat steps 12 through 13.

15. Repeat steps 10 through 14 for all vertical scale settings in the test record.

16. Repeat the procedure for all remaining channels:

   a. Push the front-panel button to deselect the channel that you have already tested.

   b. Push the front-panel button to select the next channel to be tested.

   c. Move the DC voltage source connection to the channel input to be tested.

   d. Double-tap the **Mean** measurement badge.

   e. Tap the **Configure** panel label.

   f. Tap the **Source 1** field and select the next channel to test.

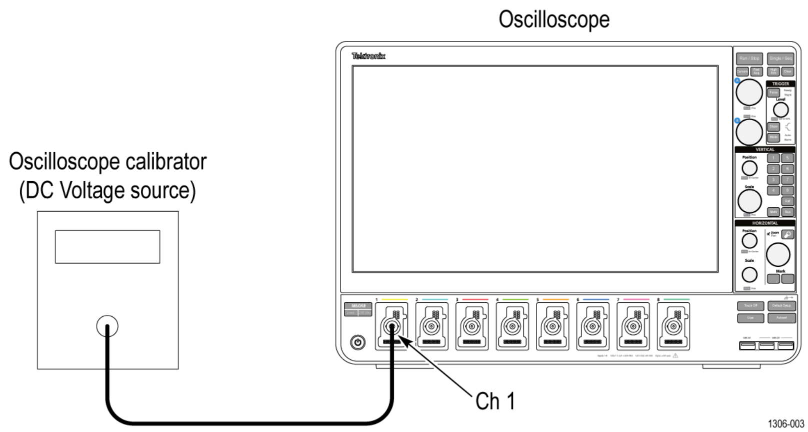
   g. Starting from step 5, repeat the procedure until all channels have been tested.

17. Tap outside the menu area to close the configuration menu.

Check offset accuracy

This test checks the offset accuracy.

1. Connect the oscilloscope to a DC voltage source. If you are using the Fluke 9500B calibrator as the DC voltage source, connect the calibrator head to the oscilloscope channel 1.



WARNING. *The generator is capable of providing dangerous voltages. Be sure to set the generator to off or 0 volts before connecting, disconnecting, and/or moving the test hookup during the performance of this procedure.*

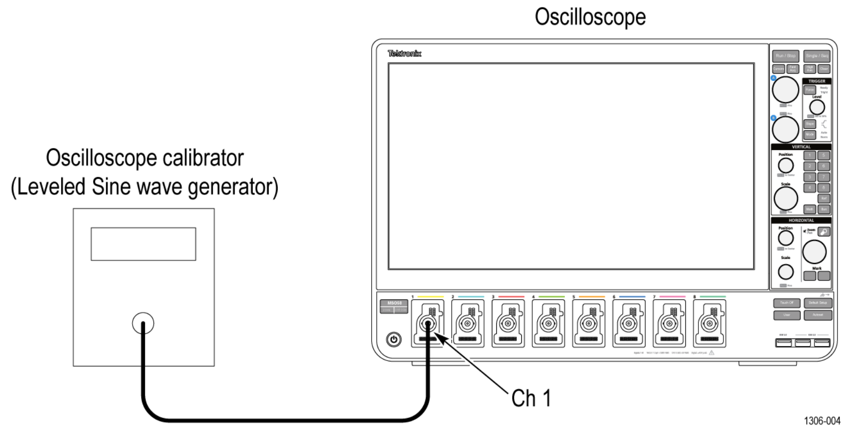
2. Push the front-panel **Default Setup** button.
3. Use the front-panel knob to set the Horizontal **Scale** to **1 ms/div**.
4. Double-tap the **Acquisition** badge and set the Acquisition mode to **Average**.
5. Ensure that the **number of averages** is set to **16**.
6. Double-tap the **Trigger** badge and set the trigger source to **AC line**.
7. Add a Mean amplitude measurement for channel 1 to the Results bar:
   a. Tap the **Measure** button to open Add Measurements menu.
   b. In the Amplitude Measurements panel, double-tap the **Mean** measurement button.
8. Double-tap the Channel 1 badge to open its Configuration menu.
9. Set the channel 1 **Offset** to **900 mV**.
10. Check that the vertical Position is set to **0** divisions. If it is not, tap the Position **Set to 0** button to set the position to **0**.
11. Set the termination to **50 Ω**.
12. Set the **Bandwidth Limit** to **20 MHz**.
13. Tap outside the menu to close it.
14. Use the front-panel knob to set the Vertical **Scale** to **1 mV/div**.
15. Set the calibrator to **900 mV**, as shown in the test record.
16. Enter the mean value as the test result in the test record.

17. Repeat step 16 for each vertical scale and vertical offset setting shown in the test record.
18. *Repeat the tests at 1 MΩ impedance as follows:*
    a. Change the calibrator impedance to **1 MΩ**.
    b. Double-tap the channel 1 badge to open the Channel configuration menu,
    c. Set the **Termination** to **1 MΩ**.
    d. Repeat steps 16 through 17.
19. *Repeat the procedure for all remaining channels as follows:*
    a. Push the front-panel button to deselect the channel that you have already tested.
    b. Push the front-panel button to select the next channel to be tested.
    c. Move the DC voltage source connection to the channel input to be tested.
    d. Starting from step 8, repeat the procedure until all channels have been tested. To change the source for the Mean measurement for each channel test:
        a. Double-tap the **Mean** measurement badge.
        b. Tap the **Configure** panel label.
        c. Tap the **Source 1** field and select the next channel to test.
20. Touch outside the menu area to close the configuration menu.

Check analog bandwidth

This test checks the bandwidth at 50 Ω and 1 MΩ terminations for each channel. The typical bandwidth at 1 M Ω termination is checked on the products as a functional check.

1. Connect the output of the leveled sine wave generator to the oscilloscope channel 1 input as shown in the following illustration.



WARNING. *The generator is capable of providing dangerous voltages. Be sure to set the generator to off or 0 volts before connecting, disconnecting, and/or moving the test hookup during the performance of this procedure.*

2. Push the front-panel **Default Setup** button.
3. Double-tap the Channel 1 badge to open its Configuration menu.
4. Set the Vertical **Scale** to **1 mV**.
5. Set the Termination to **50 Ω**.
6. Double-tap the Acquisition badge and set the Acquisition mode to **Sample.**
7. Adjust the leveled sine wave signal source to 8 vertical divisions at the selected vertical scale with a set frequency of **10 MHz**. For example, at 5 mV/div, use a ≥40 mV_{p-p} signal; at 2 mV/div, use a ≥16 mV_{p-p} signal.

NOTE. *At some V/div settings, the generator may not provide 8 vertical divisions of signal. Use the maximum output setting of the generator to obtain as many vertical divisions of signal as possible.*

8. Set the Horizontal **Scale** to **1 ms/division**.
9. *Record the peak-to-peak measurement as follows:*
   a. Tap the **Measure** button.
   b. In the Amplitude Measurements panel, double-tap the **Peak-to-Peak** measurement button. This will provide a mean V_{p-p} of the signal. Call this value $\mathbf{V}_{in-pp}$.
   c. Enter this value in the test record.
10. Set the Horizontal **Scale** to **4 ns/division**.

11. Adjust the signal source to the maximum bandwidth frequency for the bandwidth and model desired, as shown in the following worksheet table.

12. *Record the peak-to-peak measurement as follows:*

a. With the **Peak-to-Peak** measurement still displayed from step 9, view the measurement at the new frequency.

b. This will provide a mean $V_{p\text{-}p}$ of the signal. Call this value $\mathbf{V}_{bw\text{-}pp}$.

c. Enter this value in the test record.

NOTE. *For more information on the contents of this table, refer to the bandwidth specifications.*

Table 2: Maximum bandwidth frequency worksheet

Impedance	Vertical Scale	Maximum bandwidth
2 GHz models		
50 Ω	10 mV/div — 1 V/div	2 GHz
	5 mV/div — 9.95 mV/div	1.5 GHz
	2 mV/div — 4.98 mV/div	350 MHz
	1 mV/div — 1.99 mV/div	175 MHz
1 MΩ	5 mV/div — 1 V/div	500 MHz, typical
	2 mV/div — 4.98 mV/div	500 MHz, typical
	1 mV/div — 1.99 mV/div	500 MHz, typical
1 GHz models		
50 Ω	5 mV/div — 1 V/div	1 GHz
	2 mV/div — 4.98 mV/div	1 GHz
	1 mV/div — 1.99 mV/div	1 GHz
1 MΩ	5 mV/div — 1 V/div	500 MHz, typical
	2 mV/div — 4.98 mV/div	500 MHz, typical
	1 mV/div — 1.99 mV/div	500 MHz, typical
500 MHz models		
50 Ω	5 mV/div — 1 V/div	500 MHz
	2 mV/div — 4.98 mV/div	500 MHz
	1 mV/div — 1.99 mV/div	500 MHz
1 MΩ	5 mV/div — 1 V/div	500 MHz, typical
	2 mV/div — 4.98 mV/div	500 MHz, typical
	1 mV/div — 1.99 mV/div	500 MHz, typical
350 MHz models		
50 Ω	2 mV/div — 1 V/div	350 MHz
	1 mV/div — 1.99 mV/div	350 MHz
1 MΩ	5 mV/div — 1 V/div	350 MHz, typical
	2 mV/div — 4.98 mV/div	350 MHz, typical
	1 mV/div — 1.99 mV/div	350 MHz, typical

13. Use the values of *Vbw-pp* and *Vin-pp* stored in the test record to calculate the *Gain* at bandwidth with the following equation:

    Gain = Vbw-pp / Vin-pp

    To pass the performance measurement test, Gain should be ≥ 0.707. Enter *Gain* in the test record.

14. Repeat steps 4 through 13 for all combinations of Vertical Scale and Horizontal Scale settings listed in the test record.
15. *Repeat the tests at 1 MΩ impedance as follows:*
    a. Change the calibrator impedance to **1 MΩ**.
    b. In the channel configuration menu, set the Vertical **Termination** to **1 MΩ**.
    c. Repeat steps 4 through 14.
16. *Repeat the procedure for all remaining channels as follows:*
    a. Push the front-panel button to deselect the channel that you have already tested.
    b. Push the front-panel button to select the next channel to be tested.
    c. Move the calibrator connection to the channel input to be tested.
    d. Starting from step 5, repeat the procedure until all channels have been tested. To change the source for the Mean measurement for each channel test:
        a. Double-tap the **Peak-to-Peak** measurement badge.
        b. Tap the **Configure** panel label.
        c. Tap the **Source 1** field and select the next channel to test.

Check random noise, sample acquisition mode

This test checks random noise at 1 M Ω and 50 Ω for each channel in Sample acquisition mode. You do not need to connect any test equipment to the oscilloscope for this test.

1. Disconnect everything from the oscilloscope inputs.
2. Push the front-panel **Default Setup** button.
3. Add the **AC RMS** measurement:
    a. Tap the **Measure** button to open the Add Measurements menu.
    b. In the Amplitude Measurements panel, double-tap the **AC RMS** measurement button.
    c. Ensure that the measurement is measuring the channel being tested.
    d. Double-tap the meas badge and tap **Show Statistics in Badge** to enable statistics.
4. Set the vertical Scale value to **1 mV**.
5. Double-tap the Channel badge of the channel being tested.

6. *Check **1 M Ω** termination as follows:*
   a. In the Channel badge, tap **1 M Ω** termination.
   b. Tap the **Bandwidth** field and select the highest frequency listed.
   c. Set the Position value to **0.34** div.
   d. Take note of the AC RMS Maximum value (upper-case **M** readout).
   e. Set the Position value to **0.36** div.
   f. Take note of the AC RMS Maximum value (upper-case **M** readout).
   g. Average the two values and record the result in the **1 mV/div > Full** row of the **1 MΩ** column of the Test Result record.
   h. Tap the **Bandwidth** field and select **250 MHz**.
   i. Set the Position value to **0.34** div.
   j. Take note of the AC RMS Maximum value (upper-case **M** readout).
   k. Set the Position value to **0.36** div.
   l. Take note of the AC RMS Maximum value (upper-case **M** readout).
   m. Average the two values and record the result in the **1 mV/div > 250MHz limit** row of the **1 MΩ** column of the Test Result record.
   n. Tap the **Bandwidth** field and select **20 MHz**.
   o. Set the Position value to **0.34** div.
   p. Take note of the AC RMS Maximum value (upper-case **M** readout).
   q. Set the Position value to **0.36** div.
   r. Take note of the AC RMS Maximum value (upper-case **M** readout).
   s. Average the two values and record the result in the **1 mV/div > 20MHz limit** row of the **1 MΩ** column of the Test Result record.
7. *Check **50 Ω** termination as follows:*
   a. In the Channel badge, tap **50 Ω** termination.
   b. Tap the **Bandwidth** field and select the highest frequency listed.
   c. Set the Position value to **0.34** div.
   d. Take note of the AC RMS Maximum value (upper-case **M** readout).
   e. Set the Position value to **0.36** div.
   f. Take note of the AC RMS Maximum value (upper-case **M** readout).
   g. Average the two values and record the result in the **1 mV/div > Full** row of the **50 Ω** column of the Test Result record.
   h. Tap the **Bandwidth** field and select **250 MHz**.
   i. Set the Position value to **0.34** div.
   j. Take note of the AC RMS Maximum value (upper-case **M** readout).
   k. Set the Position value to **0.36** div.

l. Take note of the AC RMS Maximum value (upper-case **M** readout).

m. Average the two values and record the result in the **1 mV/div > 250MHz limit** row of the **50 Ω** column of the Test Result record.

n. Tap the **Bandwidth** field and select **20 MHz**.

o. Set the Position value to **0.34** div.

p. Take note of the AC RMS Maximum value (upper-case **M** readout).

q. Set the Position value to **0.36** div.

r. Take note of the AC RMS Maximum value (upper-case **M** readout).

s. Average the two values and record the result in the **1 mV/div > 20MHz limit** row of the **50 Ω** column of the Test Result record.

8. *Repeat 1 MΩ and 50 Ω tests at all V/div settings for the current channel:*

   a. In the Channel badge, set the **Vertical Scale** setting to the next value in the test record (2 mV, 5 mV, and so on, up to 1 V/div).

   b. Repeat steps 6 through 7.

9. *Repeat all tests for the remaining input channels:*

   a. Push the front-panel button to deselect the channel that you have already tested.

   b. Push the front-panel button of the channel that you want to test next.

   c. Double-tap the **AC RMS** measurement badge.

   d. Tap the **Configure** panel.

   e. Tap the **Source 1** field and select the next channel to test.

   f. Double-tap the channel badge for the channel being tested.

   g. Starting at step 4, repeat the procedure for each input channel.

10. Tap outside the menu area to close the menu.

Check random noise, High Res mode

This test checks random noise at 1 M Ω and 50 Ω for each channel in High Res mode. You do not need to connect any test equipment to the oscilloscope for this test.

1. Disconnect everything from the oscilloscope inputs.
2. Push the front-panel **Default Setup** button.
3. Push the front-panel **High Res** button.
4. Add the **AC RMS** measurement:

   a. Tap the **Measure** button to open the Add Measurements menu.

   b. In the Amplitude Measurements panel, double-tap the **AC RMS** measurement button.

   c. Ensure that the measurement is measuring the channel being tested.
   d. Double-tap the meas badge and tap **Show Statistics in Badge** to enable statistics.
5. Set the vertical Scale value to **1 mV**.
6. Double-tap the Channel badge of the channel being tested.
7. *Check **1 M Ω** termination as follows:*
   a. In the Channel badge, tap **1 M Ω** termination.
   b. Tap the **Bandwidth** field and select the highest frequency listed.
   c. Set the Position value to **0.34** div.
   d. Take note of the AC RMS Maximum value (upper-case **M** readout).
   e. Set the Position value to **-0.34** div.
   f. Take note of the AC RMS Maximum value (upper-case **M** readout).
   g. Average the two values and record the result in the **1 mV/div > Full** row of the **1 MΩ** column of the random noise, High Res mode Test Result record.
   h. Tap the **Bandwidth** field and select **250 MHz**.
   i. Set the Position value to **0.34** div.
   j. Take note of the AC RMS Maximum value (upper-case **M** readout).
   k. Set the Position value to **-0.34** div.
   l. Take note of the AC RMS Maximum value (upper-case **M** readout).
   m. Average the two values and record the result in the **1 mV/div > 250MHz limit** row of the **1 MΩ** column of the random noise, High Res mode Test Result record.
   n. Tap the **Bandwidth** field and select **20 MHz**.
   o. Set the Position value to **0.34** div.
   p. Take note of the AC RMS Maximum value (upper-case **M** readout).
   q. Set the Position value to **-0.34** div.
   r. Take note of the AC RMS Maximum value (upper-case **M** readout).
   s. Average the two values and record the result in the **1 mV/div > 20MHz limit** row of the **1 MΩ** column of the random noise, High Res mode Test Result record.
8. *Check **50 Ω** termination as follows:*
   a. In the Channel badge, tap **50 Ω** termination.
   b. Tap the **Bandwidth** field and select the highest frequency listed.
   c. Set the Position value to **0.34** div.
   d. Take note of the AC RMS Maximum value (upper-case **M** readout).
   e. Set the Position value to **-0.34** div.

f. Take note of the AC RMS Maximum value (upper-case **M** readout).

g. Average the two values and record the result in the **1 mV/div > Full** row of the **50 Ω** column of the random noise, High Res mode Test Result record.

h. Tap the **Bandwidth** field and select **250 MHz**.

i. Set the Position value to **0.34** div.

j. Take note of the AC RMS Maximum value (upper-case **M** readout).

k. Set the Position value to **-0.34** div.

l. Take note of the AC RMS Maximum value (upper-case **M** readout).

m. Average the two values and record the result in the **1 mV/div > 250MHz limit** row of the **50 Ω** column of the random noise, High Res mode Test Result record.

n. Tap the **Bandwidth** field and select **20 MHz**.

o. Set the Position value to **0.34** div.

p. Take note of the AC RMS Maximum value (upper-case **M** readout).

q. Set the Position value to **-0.34** div.

r. Take note of the AC RMS Maximum value (upper-case **M** readout).

s. Average the two values and record the result in the **1 mV/div > 20MHz limit** row of the **50 Ω** column of the random noise, High Res mode Test Result record.

9. *Repeat 1 MΩ and 50 Ω tests at all V/div settings for the current channel:*

   a. In the Channel badge, set the **Vertical Scale** setting to the next value in the test record (2 mV, 5 mV, and so on, up to 1 V/div).

   b. Repeat steps 7 through 8.

10. *Repeat all tests for the remaining input channels:*

    a. Push the front-panel button to deselect the channel that you have already tested.

    b. Push the front-panel button of the channel that you want to test next.

    c. Double-tap the **AC RMS** measurement badge.

    d. Tap the **Configure** panel.

    e. Tap the **Source 1** field and select the next channel to test.

    f. Double-tap the channel badge for the channel being tested.

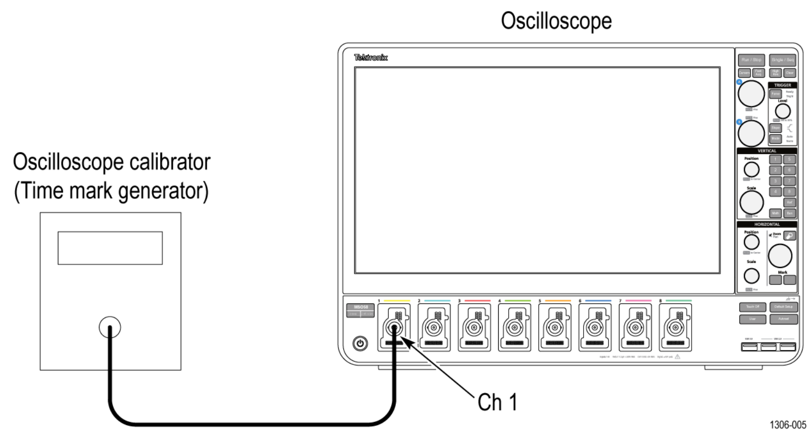
    g. Starting at step 5, repeat the procedure for each input channel.

11. Tap outside the menu area to close the menu.

Check long term sample rate

This test checks the sample rate and delay time accuracy (time base).

1. Connect the output of a time mark generator to the oscilloscope channel 1 input using a 50 Ω cable, as shown in the following illustration.



⚠ ***WARNING.*** *The generator is capable of providing dangerous voltages. Be sure to set the generator to off or 0 volts before connecting, disconnecting, and/or moving the test hookup during the performance of this procedure.*

2. Set the time mark generator period to **80 ms**. Use a time mark waveform with a fast rising edge.
3. If it is adjustable, set the time mark amplitude to approximately **2** $\mathbf{V_{P\text{-}P}}$.
4. Push the front-panel **Default Setup** button.
5. Double-tap the Channel 1 badge to open its Configuration menu.
6. Set the channel 1 termination to **50 Ω**.
7. Set the Vertical **Scale** to **500 mV**.
8. Set the Horizontal **Scale** to **20 ns/div**.
9. Set the Vertical **Position** to center the time mark signal on the screen.
10. Set the **Trigger Level** as necessary for a triggered display.
11. Adjust the Horizontal **Position** to move the trigger location to the center of the screen.
12. Set the Horizontal delay to **80 ms**.
13. Set the horizontal scale to **20 ns/div** using the Horizontal **Scale** knob or by opening the channel badge and clicking in Scale and using the up/down arrows.

14. Compare the rising edge of the marker with the center horizontal graticule line. The rising edge should be within ±40 ns of center graticule. Enter the deviation in the test record.

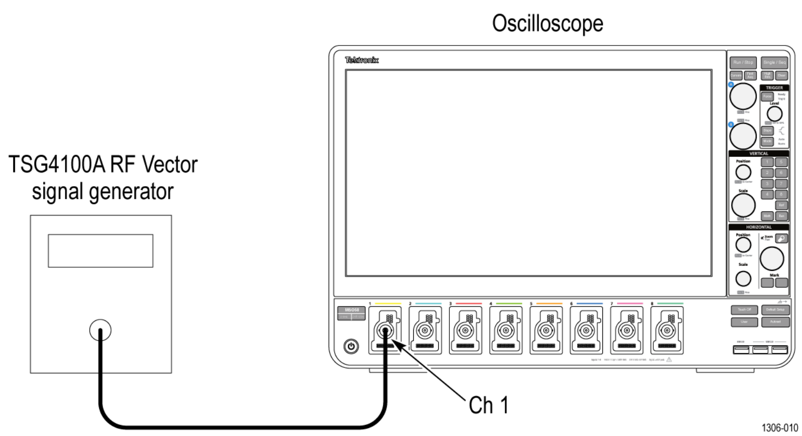
NOTE. *A 2.5 x 10^{-7} time base error is 1 division of displacement.*

15. Tap outside the menu area to close the menu.

Check delta time measurement accuracy

This test checks the Delta-time measurement accuracy for a given instrument setting and input signal.

1. Connect a 50 Ω coaxial cable from the signal source to the oscilloscope channel 1, as shown in the following illustration.



WARNING. *The generator is capable of providing dangerous voltages. Be sure to set the generator to off or 0 volts before connecting, disconnecting, and/or moving the test hookup during the performance of this procedure.*

2. Push the oscilloscope front-panel **Default Setup** button.

3. Turn on the channel under test and set the input impedance to **50 Ω**.

4. *Set the Horizontal* **Scale** *to* **10 ns/div** *as follows:*

   a. Turn the Horizontal **Scale** knob to set the time per division as close as you can to the desired setting. In this case, set the scale to **10 ns/div**.

   b. Double-tap the **Horizontal** badge.

   c. Set the Horizontal mode to **Manual**.

d. Set the sample rate to one of the unchecked values listed in the test record.

e. Reduce the record length until the correct **Horizontal Scale** is set.

5. Set the Vertical **Scale** to **5 mV/div**.
6. Set the impedance to **50 Ω**.
7. Add a **Delay** measurement for the channel under test.
8. Double-tap the **Delay** measurement badge.
9. Check **Show Statistics in Badge**.
10. Tap the **Configuration** panel.
11. Set **Source 1** and **Source 2** to the channel under test.
12. Set the From Edge to the rising edge button, and set the To Edge to the falling edge button.
13. Tap the **Reference Levels** panel.
14. Tap **%** in the Set Levels In controls.
15. Tap the **Filter/Limit Results** panel.
16. Tap **Limit Measurement Population** to turn it on.
17. Double-tap the Limit field and set the limit to **500.**
18. Set the calibrator signal source to the frequency and amplitude as shown in the test record.

NOTE. *To provide consistent results, set the signal source frequency such that the zero crossing does not occur very close to the beginning or end of the record.*

---

19. Wait 5 or 10 seconds for the oscilloscope to acquire 500 samples before taking the reading.
20. *Check the oscilloscope performance as follows*:

    a. Verify that the **St Dev** readout in the Delay measurement badge is less than the upper limit shown in the test record.

    b. Enter the reading in the test record.

    c. Repeat the check for each combination of oscilloscope and source signal settings in the test record.

21. *Repeat the procedure for all remaining channels as follows:*

    a. Push the front-panel button to deselect the channel that you have already tested.

    b. Push the front-panel channel button for the next channel to be tested.

c. Connect the signal source to the input for that channel.

d. Repeat the procedure from step 6 until all channels have been tested. To change the source for the Delay measurement for each channel test:

   a. Double-tap the **Delay** measurement badge.

   b. Tap the **Configure** panel label.

   c. Tap the **Source 1** field and select the next channel to test.

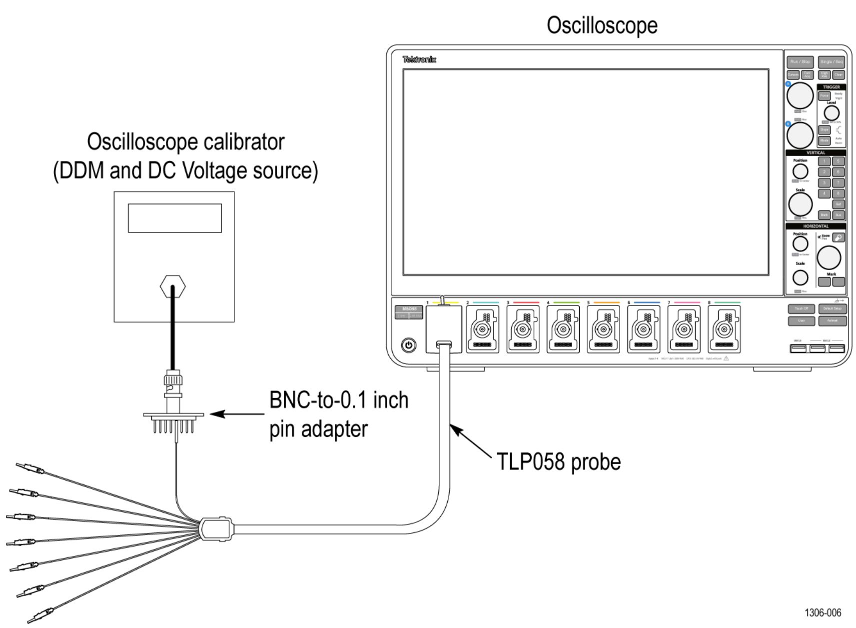
22. Tap outside the menu area to close the menu.

Check digital threshold accuracy

This test checks the threshold accuracy of the logic probe digital channels D0-D7 at 0 V and 25 °C, for all oscilloscope input channels.

NOTE. *Threshold Accuracy is a function of the logic probe only. It is a typical specification. The Threshold Accuracy test checks the typical logic probe performance, and may be considered a functional check of the oscilloscope digital input.*

1. Connect the TLP058 digital probe to channel 1.



WARNING. *The generator is capable of providing dangerous voltages. Be sure to set the generator to Off or 0 volts before connecting, disconnecting, and/or moving the test hookup during the performance of this procedure.*

2. Connect the DC voltage source to digital channel **D0**.

   If you are using the Fluke 9500 calibrator as the DC voltage source, connect the calibrator head to the digital channel D0, using the BNC-to-0.1 inch pin adapter listed in the *Required equipment* table. Be sure to connect channel D0 from the probe connector to both the corresponding signal pin and to a ground pin on the adapter.

3. Push the front-panel **Default Setup** button.
4. *Turn on the digital channels and set the thresholds as follows:*
   a. Verify the corresponding channel button on the front panel is active for the digital channel to test. If not, push the front-panel channel button to activate the channel to test.
   b. Double-tap the channel badge of the channel being tested.
   c. Tap the **Threshold** field at the bottom of the menu, and use the multipurpose knob to set the value to **0.00 V**.
   d. Tap **Set All Threshold**. All thresholds are now set for the 0 V threshold check.
5. Set the Horizontal Scale to **4 µs/div**.
6. Set the DC voltage source (Vs) to **-400 mV**.
7. Wait 1 second. Verify that the logic level is low.
8. Increment Vs by **+10 mV**. Wait 1 second and check the logic level of the channel D0 signal display.

   If the signal level is a logic low or is alternating between high and low, continue to increment Vs by +10 mV, wait 1 second, and check the logic level until the logic state is high.

9. Record this Vs value as **Vs-** for D0 of the test record.
10. Double-tap the **Trigger** badge and set the **Slope** button to **Falling** edge.
11. Set the DC voltage source (Vs) to **+400 mV**.
12. Wait 1 second. Verify that the logic level is high.
13. Decrement Vs by **-10 mV**. Wait 1 second and check the logic level of the channel D0 signal display.

    If the signal level is a logic high or is alternating between high and low, continue to decrement Vs by -10 mV, wait 1 second, and check the logic level until the logic state is low.

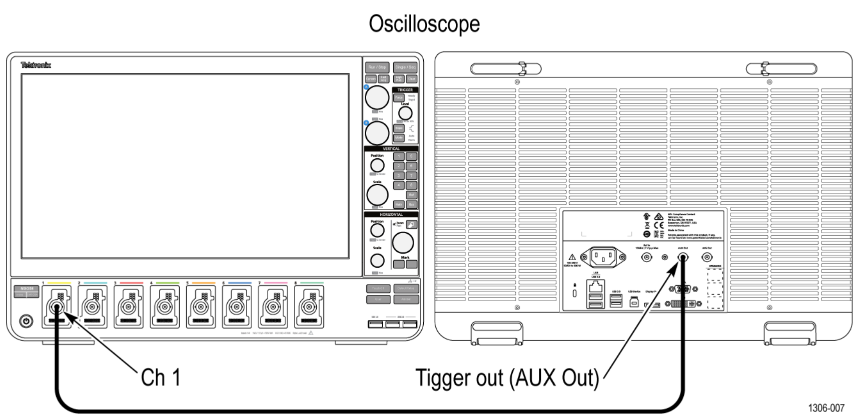
14. Record this Vs value as **Vs+** for D0 of the test record.
15. Find the average using this formula: $V_{sAvg} = (V_{s-} + V_{s+})/2$.
16. Record the average as the test result for D0 in the test record. The test result should be between the low and high limits.

17. *Repeat the procedure for all remaining digital channels as follows:*
    a. Connect the DC voltage source to the next digital channel to be tested (D1, D2, and so on).
    b. Repeat steps 6 through 17, until all digital channels have been tested.
18. Tap outside the menu area to close the menu.

Check AUX Out output voltage levels

This test checks the output voltage levels from the AUX Out connector.

1. Use a 50 Ω cable to connect the AUX Out signal from the rear of the instrument to the channel 1 input of the same instrument, as shown in the following illustration.



2. Push the front-panel **Default Setup** button.
3. Set the Horizontal scale to **400 ns/div**.
4. Set the Vertical **Scale** to **1 V/div**.
5. *Record the Maximum and Minimum measurements at 1 MΩ termination as follows:*
    a. Add the **Maximum** measurement badge for channel 1.
    b. Add the **Minimum** measurement badge for channel 1.
    c. Enter the Maximum and Minimum measurement readings in the 1 MΩ row of the test record.
6. *Record the Maximum and Minimum measurements at 50 Ω termination as follows:*
    a. Double-tap the channel badge for channel 1.
    b. Set the **Termination** to **50 Ω**.
    c. Enter the Maximum and Minimum measurement readings in the 50 Ω row of the test record.

Check DVM voltage accuracy (DC)

This test checks the DVM voltage accuracy (DC).

1. Connect the oscilloscope to a DC voltage source to run this test. If using the Fluke 9500 calibrator as the DC voltage source, connect the calibrator head to the oscilloscope channel to test.
2. Push the **Default Setup** button on the front panel to set the instrument to the factory default settings.
3. Push channel button of the channel you want to check.
4. Confirm that the oscilloscope channel termination and calibrator impedance are both set to **1 MΩ**.
5. Set the oscilloscope Bandwidth Limit to **20 MHz**.
6. Check that the vertical position is set to 0 divisions. If not, set the position to 0 divisions.
7. Set the calibrator to the input voltage shown in the test record (for example, –5 V for a 1V/div setting). Set the calibrator impedance to match the termination setting for the oscilloscope (**1 MΩ**).
8. Set the oscilloscope to the vertical offset value shown in the test record (for example, –5 V for –5 V input and **1 V/div** setting).
9. Turn the vertical Scale knob to match the value in the test record (for example, 1 V/div).
10. Turn the Horizontal Scale knob to **1 ms/div**.
11. Double-tap the Acquisition badge and set the acquisition mode to **Average**. Verify or set the number of averages to 16.
12. Double-tap the Trigger badge and set the Trigger Source to **AC Line**.
13. Tap the DVM button to turn on the DVM function.
14. Set the DVM Source to the input channel to be tested.
15. Set the DVM Mode to **DC**.
16. Tap outside the DVM menu to close the DVM configuration menu. The measured value should appear in the DVM badge in the Results Bar.
17. Enter the measured value in the test record. (See page 61, DVM Voltage Accuracy Tests (DC).)
18. Repeat the procedure (steps 7, 8, 9 and 17) for each volts/division setting shown in the test record.
19. Repeat all steps, starting with step 1, for each oscilloscope channel you want to check.

Check DVM voltage accuracy (AC)

This test checks the DVM voltage accuracy (AC).

1. Connect the output of the leveled square wave generator (for example, Fluke 9500) to the oscilloscope channel 1 input.
2. Set the generator to **50 Ω** output impedance (50 Ω source impedance).
3. Set the generator to produce a square wave of the amplitude and frequency listed in the test record (for example, 20 mV_{pp} and 1 kHz).
4. Push **Default Setup** on the oscilloscope front panel to set the instrument to the factory default settings.
5. Push the channel button for the channel that you want to check.
6. Double-tap the channel badge of the channel being tested to open its configuration menu.
7. Set the oscilloscope channel termination to **50 Ω**.
8. Turn the vertical scale knob so that the signal covers between 4 and 8 vertical divisions on the screen.
9. Tap the DVM button to turn on the DVM function.
10. Set the DVM mode to **AC RMS**.
11. Set the DVM Source to the input channel being tested.
12. Enter the measured value in the test record.
13. Repeat procedure for each voltage and frequency combination shown in the record.
14. Repeat all steps for each oscilloscope channel.

Check trigger frequency accuracy and maximum input frequency

This test checks trigger frequency counter accuracy. The trigger frequency counter is part of the free DVM and trigger frequency option that is available when you register the instrument at tek.com.

1. Push **Default Setup** on the oscilloscope front panel to set the instrument to the factory default settings.
2. Connect the output of the time mark generator to the oscilloscope channel input being tested using a 50 Ω cable. Use the time mark generator with a 50 Ω source.
3. Double-tap the channel badge being tested and set the termination to **50 Ω**.
4. Set the time mark generator to the value shown in the test record. For example, use 10 Hz. Use a time mark waveform with a fast rising edge.
5. Connect the 10 MHz Reference out from the time mark generator to the oscilloscope **Ref In** connector on the back of the instrument.

6. On the oscilloscope, double-tap the **Acquisition** badge and select Timebase Reference Source to **External (10 MHz)**.
7. Set the time mark generator to the value shown in the test record. For example, use **10 Hz**. Use a time mark waveform with a fast rising edge (≥ 3 mV/ns).
8. Set the mark amplitude to **1** V_{pp}, which makes a 2 divisions high waveform.
9. Set the oscilloscope vertical Scale to **500 mV/div**.
10. Set the Horizontal Scale to display at least 2 cycles of a waveform.
11. Push the **Trigger Level** knob to set the trigger level to 50% of the waveform, to obtain a stable display.
12. Adjust the vertical **Position** knob to center the time mark in the waveform graticule.
13. Tap the **DVM** button to add the DVM readout badge to the top of the Results bar.
14. Double tap the **Trigger** badge to display the Trigger configuration menu.
15. Set the Trigger **Source** to the input channel being tested.
16. Tap **Mode & Holdoff** to display the Mode & Holdoff configuration menu.
17. In the Mode & Hold Off menu, turn the Trigger Frequency Counter **On**. The trigger frequency readout is at the bottom of the Trigger badge.
18. Enter the measured value in the test record.
19. Repeat this procedure for each frequency setting shown in the record. (Keep the same vertical and horizontal scales as set in steps 9 and 10.)
20. Repeat all these steps for each oscilloscope channel.

Arbitrary function generator

Check AFG sine and ramp frequency accuracy

This test verifies the frequency accuracy of the arbitrary function generator. All output frequencies are derived from a single internally generated frequency. Only one frequency point of channel 1 is required to be checked.

1. Connect the arbitrary function generator to the frequency counter as shown in the following figure.

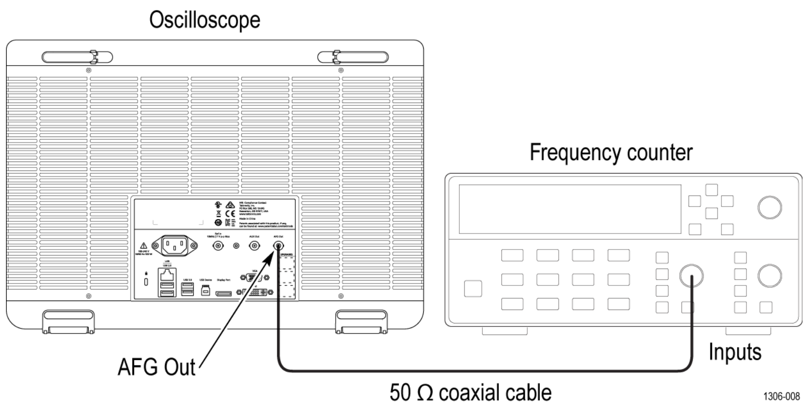


Figure 1: Frequency/period test

2. Push the **Default Setup** front-panel button.
3. Tap the **AFG** button to open the AFG Configuration menu.
4. Set the arbitrary function generator output as follows:

Select menu	Setting
Waveform Type	Sine
Frequency	1.000000 MHz
Amplitude	1.00 V_{pp}
Output	On

5. Check that the reading of the frequency counter is between **0.999950 MHz** and **1.000050 MHz**. Enter the value in the Test record.
6. Set the arbitrary function generator output as follows:

Select menu	Setting
Waveform Type	Ramp
Frequency	500 kHz

7. Check that reading of the frequency counter is between **499.975 kHz** and **500.025 kHz**. Enter the value in the Test record.

Check AFG square and pulse frequency accuracy

This test verifies the frequency accuracy of the arbitrary function generator. All output frequencies are derived from a single internally generated frequency. Only one frequency point of channel 1 is required to be checked.

1. Connect the arbitrary function generator to the frequency counter as shown in the following figure.

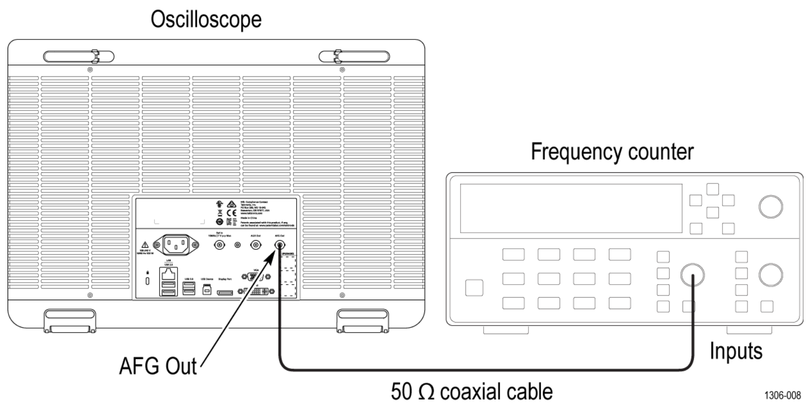


Figure 2: Frequency/period test

2. Push the **Default Setup** front-panel button.
3. Tap the **AFG** button to open the AFG Configuration menu.
4. Set up the arbitrary function generator using the following steps:

Select menu	Setting
Waveform Type	Square
Frequency	1.000000 MHz
Amplitude	1.00 Vpp
Output	On

5. Check that reading of the frequency counter is between **0.999950 MHz** and **1.00005 MHz**. Enter the value in the Test record.
6. Set up the arbitrary function generator as follows:

Select menu	Setting
Waveform Type	Pulse

7. Check that reading of the frequency counter is between **0.999950 MHz** and **1.000050 MHz**. Enter the value in the Test record.

Check AFG signal amplitude accuracy

This test verifies the amplitude accuracy of the arbitrary function generator. All output amplitudes are derived from a combination of attenuators and 3 dB variable gain. Some amplitude points are checked. This test uses a 50 Ω terminator. It is necessary to know the accuracy of the 50 Ω terminator in advance of this amplitude test. This accuracy is used as a calibration factor.

1. Connect the 50 Ω terminator to the DMM as shown in the following figure and measure the resistance value.

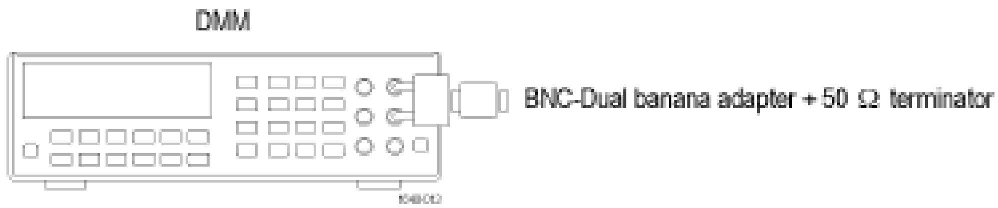


Figure 3: 50 Ω terminator accuracy

2. Calculate the 50 Ω calibration factor (CF) from the reading value and record as follows:

Table 3: CF (Calibration Factor) = 1.414 × ((50 / Measurement Ω) + 1)

Measurement (reading of the DMM)	Calculated CF

Examples:

For a measurement of 50.50 Ω, CF = 1.414 (50 / 50.50 + 1) = **2.814**.

For a measurement of 49.62 Ω, CF = 1.414 (50 / 49.62 + 1) = **2.839**.

3. Connect the arbitrary function generator output to the DMM as shown in the following figure. Be sure to connect the 50 Ω terminator to the AFG Out connector.

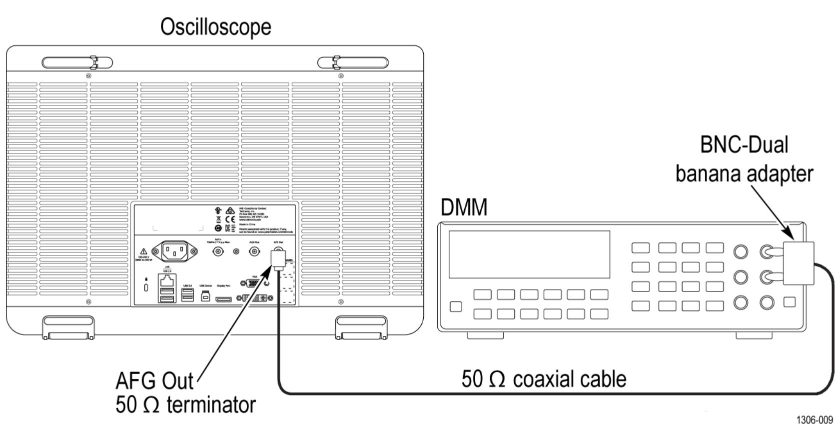


Figure 4: Amplitude test

4. Tap the **AFG** button and set up the arbitrary function generator output as follows:

Select menu	Setting
Waveform Type	Sine
Frequency	1.000000 kHz
Amplitude	30 mV_{PP}
Load Impedance	50 Ω
Output	On

5. Measure the voltage using the DMM.
6. Multiply the DMM voltage by CF to get the corrected peak to peak voltage. Enter it in the Measurement field in the following table.
7. Change the AFG output amplitude to the next value in the table.
8. Repeat steps 5 through 7 for each amplitude value. Check that the peak to peak voltages are within the limits in the table below. Enter the values in the test record.

Waveform Type	Frequency	Amplitude	Measurement	Range
Sine	1.000 kHz	30.0 mV_{PP}		28.55 mV_{PP} - 31.45 mV_{PP}
Sine	1.000 kHz	300.0 mV_{PP}		294.5 mV_{PP} - 305.5 mV_{PP}
Sine	1.000 kHz	800.0 mV_{PP}		787.0 mV_{PP} - 813.0 mV_{PP}
Sine	1.000 kHz	1.500 V_{PP}		1.4765 V_{PP} - 1.5235 V_{PP}
Sine	1.000 kHz	2.000 V_{PP}		1.969 V_{PP} - 2.031 V_{PP}
Sine	1.000 kHz	2.500 V_{PP}		2.4615 V_{PP} - 2.5385 V_{PP}

Check AFG DC offset accuracy

This test verifies the DC offset accuracy of the arbitrary function generator. This test uses a 50 Ω terminator. It is necessary to know the accuracy of a 50 Ω terminator in advance of this test. This accuracy is used as a calibration factor.

1. Connect the 50 Ω terminator to the DMM as shown in the following figure and measure the resistance value.

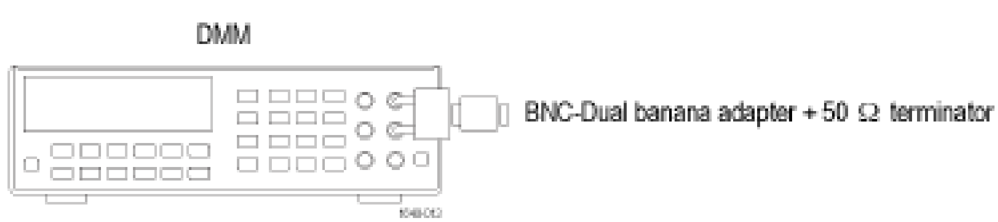


Figure 5: 50 Ω terminator accuracy

2. Calculate the 50 Ω calibration factor (CF) from the reading value and record as follows:

Table 4: CF (Calibration Factor) = 0.5 × ((50 / Measurement Ω) + 1)

Measurement (reading of the DMM)	Calculated CF

Examples:

For a measurement of 50.50 Ω, CF = 0.5 (50 / 50.50 + 1) = **0.9951**.

For a measurement of 49.62 Ω, CF = 0.5 (50 / 49.62 + 1) = **1.0038**.

3. Connect the arbitrary function generator output to the DMM as shown in the following figure. Be sure to connect the 50 Ω terminator to the arbitrary function generator Output connector.

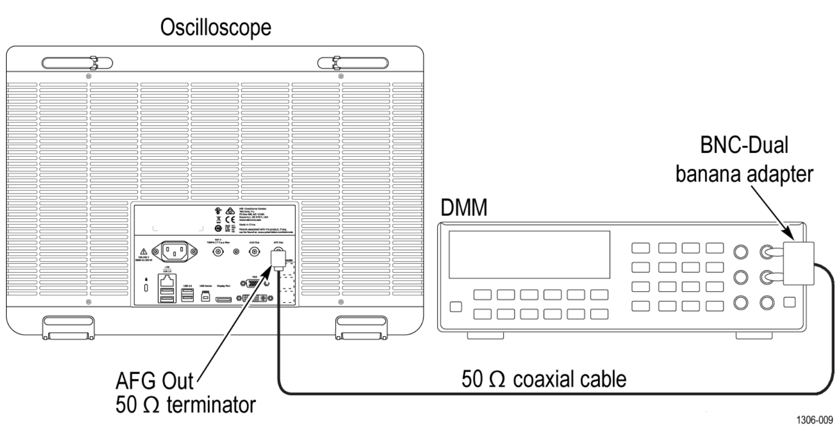


Figure 6: DC offset tests

4. Set up the arbitrary function generator using the following steps:

Select menu	Setting
Waveform Type	DC
Offset	+ 1.25 V
Output	On

5. Multiply each offset measurement by CF calculated above.

   Verify that the corrected offset measurement is within the range specified in the following table.

Function	Offset	Measurement	Range
DC	+ 1.25 Vdc	Vdc	1.23025 Vdc to 1.26975 Vdc
DC	0.000 Vdc	Vdc	- 0.001 Vdc to + 0.001 Vdc
DC	- 1.25 Vdc	Vdc	-1.26975 Vdc to -1.23025 Vdc