6 Series B Mixed Signal Oscilloscopes

Specifications and Performance Verification

(MSO64B, MSO66B, MSO68B)

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 Product Firmware V1.28 and above

077-1695-00

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- 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.

To safely perform service on this product, see the *Service safety summary* that follows the *General safety summary*.

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.

This product shall be used in accordance with local and national 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.
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 installation instructions in the manual 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 a handle or handles for lifting and carrying. 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 protective barrier, protective finger guard, or tactile indicator 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.

Service safety summary

The *Service safety summary* section contains additional information required to safely perform service on the product. Only qualified personnel should perform service procedures. Read this *Service safety summary* and the *General safety summary* before performing any service procedures.

To avoid electric shock	Do not touch exposed connections.

Do not service alone	Do not perform internal service or adjustments of this product unless another person capable of rendering first aid and resuscitation is present.
Disconnect power	To avoid electric shock, switch off the product power and disconnect the power cord from the mains power before removing any covers or panels, or opening the case for servicing.
Use care when servicing with power on	Dangerous voltages or currents may exist in this product. Disconnect power, remove battery (if applicable), and disconnect test leads before removing protective panels, soldering, or replacing components.
Verify safety after repair	Always recheck ground continuity and mains dielectric strength after performing a repair.

Terms in this 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(s) may appear on the product.


CAUTION
Refer to Manual


Protective Ground
(Earth) Terminal


Functional
Earth Terminal


Chassis Ground


Standby

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 48)
- The instrument must be powered from a source that meets the specifications. (See *Power supply system* on page 48)
- 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 inputs

Number of analog input channels

MSO64B: 4

MSO66B: 6

MSO68B: 8

Input coupling

DC, AC

Input resistance selection

1 MΩ or 50 Ω

250 KΩ selectable for Performance Verification

✓DC Input Resistance, 50 Ω, DC coupled

50 Ω ±3%

✓DC Input Resistance, 1MΩ DC-Coupled

1 MΩ ±1%

Input VSWR, 50 Ω DC-coupled, typical

Input Frequency	VSWR <100 mV/div	VSWR ≥ 100 mV/div
≤2.5 GHz	1.4	1.2
>2.5 GHz and ≤6 GHz	1.5	1.3
>6 GHz and ≤9.5 GHz	1.9	1.8
>9.5 GHz and ≤10 GHz	2.1	1.9

Maximum input voltage, 50 Ω

2.3 V_{RMS}, at <100 mV/div, with peaks ≤±20 V (Pulse Width ≤ 1 µs)

5.5 V_{RMS}, at ≥ 100 mV/div, with peaks ≤±20 V (Pulse Width ≤ 200 µs)

Maximum input voltage 1 MΩ DC-coupled

300 V_{RMS}, DC to 10 kHz

Maximum peak input voltage at the BNC, ±425 V

Sensitivity range, coarse

1 MΩ 500 µV/div to 10 V/div in a 1-2-5 sequence

50 Ω 1 mV/div to 1 V/div in a 1-2-5 sequence

Sensitivity range (Fine)

1 MΩ	Allows continuous adjustment from 500µV/div to 10V/div
50 Ω	Allows continuous adjustment from 1mV/divto 1V/div
Sensitivity Resolution (Fine)	≤1% of coarse sensitivity range setting
Input capacitance 1 MΩ DC coupled, typical	14.5 pF ±1.5 pF

Analog DC

Maximum offset ranges,

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

Volts/div Setting	Maximum offset range, 50 Ω Input
1 mV/div - 99 mV/div	±1 V
100 mV/div - 1 V/div	±10 V

Volts/div Setting	Maximum offset range, 1 MΩ Input
500 µV/div - 63 mV/div	±1 V
64 mV/div - 999 mV/div	±10 V
1 V/div - 10 V/div	±100 V

Input Signal cannot exceed max input voltage for the 50 Ω input path.

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 + 0.05 * 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| + 0.1 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)

✓Offset accuracy

50 Ω DC-coupled	≥5 mV/div: ± (0.005 X |offset – position| + 0.087 div) 2 mV/div: ± (0.005 X |offset – position| + 0.13 div) 1 mV/div: ± (0.005 X |offset – position| + 0.224 div)
1 MΩ DC-coupled	≥5 mV/div: ± (0.005 X |offset – position| + 0.2 div)

2 mV/div: ± (0.005 X |offset – position| + 0.237 div)
1 mV/div: ± (0.005 X |offset – position| + 0.384 div)
Offset and position in units of Volts

Position range ±5 divisions

✓DC gain accuracy

50 Ω ±2.0%[1] at >2 mV/div (±2.0% at 2 mV/div, ±4.0% at 1 mV/div, typical)

±1.0%[2] of full scale at >2 mV/div, (±1.0% of full scale at 2 mV/div, ± 2.0% at 1 mV/div, typical)

1 MΩ ±2.0%[1] at >2 mV/div (±2.0% at 2 mV/div, ±2.5% at 1 mV/div and 500 µV/div, typical)

±1.0%[2] of full scale at >2 mV/div, (±1.0% of full scale at 2 mV/div, ±1.25% at 1 mV/div and 500 µV/div, typical)

✓Digital nonlinearity, typical

INL @ > 2 mV/div: ±16 DL's (12-bit reference)
INL @ ≤ 2 mV/div: ±20 DL's (12-bit reference)
DNL: ±1.0 DL's (12-bit digitizing scale) when oscilloscope is in Hi-Res mode.

Analog AC

✓Analog bandwidth 50 Ω DC coupled

Model	Volts/div Setting	Bandwidth
MSO6XB BW-10000	1 mV/div – 1V/div	DC - 10GHz
MSO6XB BW-8000	1 mV/div – 1V/div	DC – 8 GHz
MSO6XB BW-6000	1 mV/div – 1V/div	DC – 6 GHz
MSO6XB BW-4000	1 mV/div – 1V/div	DC – 4 GHz
MSO6XB BW-2500	1 mV/div – 1V/div	DC – 2.5 GHz
MSO6XB BW-1000	1 mV/div – 1V/div	DC – 1 GHz

✓Analog Bandwidth, 1 MΩ

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.

MSO6XB, all models:

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

Analog bandwidth TPP1000 10X probe

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.

Model	Volts/Div Setting	Bandwidth
MDO6X, all models	5 mV/div - 100 V/div	DC - 1 GHz

1 Immediately following SPC, add 2% for every 5 °C change in ambient.
2 Immediately following SPC, add 1% for every 5 °C change in ambient.

Bandwidth selections

10 GHz model, 50 Ohm:	20 MHz, 200 MHz, 250 MHz, 350 MHz, 500 MHz, 1 GHz, 2 GHz, 2.5 GHz, 3 GHz, 4 GHz, 5 GHz, 6 GHz, 7 GHz, 8GHz, 9GHz, and 10 GHz.
8 GHz model, 50 Ohm	20 MHz, 200 MHz, 250 MHz, 350 MHz, 500 MHz, 1 GHz, 2 GHz, 2.5 GHz, 3 GHz,4 GHz, 5 GHz, 6 GHz, 7 GHz, and 8 GHz.
6 GHz model, 50 Ohm	20 MHz, 200 MHz, 250 MHz, 350 MHz, 500 MHz, 1 GHz, 2 GHz, 2.5 GHz, 3 GHz,4 GHz, 5 GHz, and 6 GHz
4 GHz model, 50 Ohm	20 MHz, 200 MHz, 250 MHz, 350 MHz, 500 MHz, 1 GHz, 2 GHz, 2.5 GHz, 3 GHz, and 4 GHz
2.5 GHz model, 50 Ohm	20 MHz, 200 MHz, 250 MHz, 350 MHz, 500 MHz, 1 GHz, 2 GHz, and 2.5 GHz
1 GHz model, 50 Ohm	20 MHz, 200 MHz, 250 MHz, 350 MHz, 500 MHz, and 1 GHz
1M Ohm	20 MHz (HW), 200 MHz, 250 MHz (HW), 350 MHz, and Full (500 MHz)

Frequency response tolerance/ flatness, 50 Ω

± 0.5 dB from DC to 80% of rated bandwidth up to 8 GHz instruments

± 0.5 dB from DC To 65% of rated bandwidth for 10 GHz instruments

Combined TDP7700 and 6 Series B MSO flatness, typical

±0.6 dB from DC to 80% of nominal BW when used with P77C292MM (SMA Probe Tip)

Not valid while using peak detect or envelope mode. Valid for probe modes A, B, and D

Phase accuracy

±2.5 degrees, typical out to 9 GHz

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

50 Ω, DC-coupled	250 MHz, ± 5%
1 MΩ, DC-coupled	250 MHz, ± 25%

Upper frequency limit, 20 MHz bandwidth limited, typical

50 Ω, DC-coupled	20 MHz, ± 5%
1 MΩ, DC-coupled	20 MHz, ± 25%

Calculated rise time

The formula used is 0.4/BW where BW is the measured –3 dB bandwidth of the oscilloscope. The formula accounts for the rise time contribution of the oscilloscope independent of the rise time of the signal source.

Calculated Rise Time (10% to 90%)[3]

Model	50 Ω	TPP1000 Probe
	1 mV-1 V	5 mV-10 V
MSO6X BW-10000	40 ps	400 ps
MSO6X BW-8000	50 ps	400 ps
MSO6X BW-6000	66.67 ps	400 ps

Table continued…

[3] Below specification is independent of oscilloscope model and is dependent on bandwidth option only.

Model	50 Ω	TPP1000 Probe
	1 mV-1 V	5 mV-10 V
MSO6X BW-4000	100 ps	400 ps
MSO6X BW-2500	160 ps	400 ps
MSO6X BW-1000	400 ps	400 ps

Effective bits (ENOB), typical

These limits apply to:

- Fastacq turned OFF
- 8 channel box: ch1, ch5
- 6 channel box: ch1, ch4
- 4 channel box: ch1, ch3

50 mV/div, 50 GS, Sample mode, 50 ohm, TYP						50 mV/div, 25 GS, HiRes mode, 50 ohm, TYP										
	Channel bandwidth															
Frequency	10 GHz	9 GHz	8 GHz	7 GHz	6 GHz	5 GHz	4 GHz	3 GHz	2.5 GHz	2 GHz	1 GHz	500 MHz	350 MHz	250 MHz	200 MHz	20 MHz
10 MHz	6.6	6.75	6.85	7	7.15	7.4	7.6	7.85	7.95	8.05	8.45	8.65	8.8	8.85	8.9	9.85
250 MHz	6.6	6.75	6.85	7	7.15	7.35	7.5	7.75	7.85	7.95	8.3	8.65	8.8	8.85		
1 GHz	6.6	6.75	6.85	7	7.1	7.3	7.45	7.7	7.8	7.95	8.3					
2 GHz	6.55	6.65	6.75	6.85	7	7.2	7.35	7.55	7.65	7.75						
4 GHz	6.45	6.65	6.75	6.95	7.05	7.2	7.35									
7 GHz	6.55	6.65	6.75	6.9												

2 mV/div, 50 GS, Sample mode, 50 ohm, TYP						2 mV/div, 25 GS, HiRes mode, 50 ohm, TYP										
	Channel bandwidth															
Frequency	10 GHz	9 GHz	8 GHz	7 GHz	6 GHz	5 GHz	4 GHz	3 GHz	2.5 GHz	2 GHz	1 GHz	500 MHz	350 MHz	250 MHz	200 MHz	20 MHz
10 MHz	4.95	5.1	5.2	5.35	5.55	5.7	5.9	6.1	6.2	6.35	6.8	7.25	7.5	7.65	7.85	9.25
250 MHz	4.95	5.1	5.2	5.35	5.55	5.7	5.85	6.1	6.2	6.35	6.8	7.25	7.5	7.65		

Table continued…

1 GHz	4.95	5.1	5.2	5.35	5.55	5.7	5.85	6.1	6.2	6.35	6.8					
2 GHz	4.95	5.1	5.2	5.35	5.55	5.65	5.85	6.05	6.2	6.35						
4 GHz	4.9	5.1	5.2	5.35	5.55	5.65	5.85									
7 GHz	4.9	5.1	5.2	5.35												

50 mV/div, 50 GS, Sample mode, 50 ohm, SPEC						**50 mV/div, 25 GS, HiRes mode, 50 ohm, SPEC**										
	Channel bandwidth															
Frequency	**10 GHz**	**9 GHz**	**8 GHz**	**7 GHz**	**6 GHz**	**5 GHz**	**4 GHz**	**3 GHz**	**2.5 GHz**	**2 GHz**	**1 GHz**	**500 MHz**	**350 MHz**	**250 MHz**	**200 MHz**	**20 MHz**
10 MHz	6.15	6.27	6.36	6.48	6.59	7.05	7.25	7.35	7.6	7.55	7.95	7.95	8.3	8.35	8.3	8.9
250 MHz	6.15	6.27	6.36	6.48	6.59	7	7.15	7.4	7.35	7.35	7.6	7.95	8	8.05		
1 GHz	6.15	6.27	6.36	6.48	6.56	6.95	7.1	7.2	7.45	7.5	7.95					
2 GHz	6.10	6.19	6.27	6.46	6.48	6.75	6.9	7	7.15	7.25						
4 GHz	6.02	6.19	6.27	6.44	6.52	6.65	6.8									
7 GHz	6.10	6.19	6.27	6.40												

2 mV/div, 50 GS, Sample mode, 50 ohm, SPEC						**2 mV/div, 25 GS, HiRes mode, 50 ohm, SPEC**										
	Channel bandwidth															
Frequency	**10 GHz**	**9 GHz**	**8 GHz**	**7 GHz**	**6 GHz**	**5 GHz**	**4 GHz**	**3 GHz**	**2.5 GHz**	**2 GHz**	**1 GHz**	**500 MHz**	**350 MHz**	**250 MHz**	**200 MHz**	**20 MHz**
10 MHz	4.60	4.75	4.85	5.00	5.20	5.35	5.55	5.75	5.85	6.00	6.45	6.90	7.15	7.30	7.50	8.4
250 MHz	4.60	4.75	4.85	5.00	5.20	5.35	5.50	5.75	5.85	6.00	6.45	6.90	7.15	7.30		
1 GHz	4.60	4.75	4.85	5.00	5.20	5.35	5.50	5.75	5.85	6.00	6.45					
2 GHz	4.60	4.75	4.85	5.00	5.20	5.30	5.50	5.70	5.85	6.00						
4 GHz	4.55	4.75	4.85	5.00	5.20	5.30	5.50									

Table continued…

7 GHz	4.55	4.75	4.85	5.00												

These limits apply to:

- 8 channel box: ch1, ch2, ch5, ch6
- 6 channel box: ch1, ch2, ch4, ch5
- 4 channel box: all channels

50 mV/div, 25 GS, Sample mode, 50 ohm, TYP						**50 mV/div, 12.5 GS, HiRes mode, 50 ohm, TYP**										
	Channel bandwidth															
Frequency	**10 GHz**	**9 GHz**	**8 GHz**	**7 GHz**	**6 GHz**	**5 GHz**	**4 GHz**	**3 GHz**	**2.5 GHz**	**2 GHz**	**1 GHz**	**500 MHz**	**350 MHz**	**250 MHz**	**200 MHz**	**20 MHz**
10 MHz	6.25	6.4	6.5	6.6	6.8	7.05	7.25	7.5	7.6	7.8	8.2	8.5	8.65	8.75	8.85	9.75
250 MHz	6.25	6.4	6.5	6.6	6.8	7	7.2	7.4	7.55	7.7	8.1	8.5	8.9	9		
1 GHz	6.25	6.4	6.5	6.6	6.8	7	7.15	7.4	7.5	7.65	8					
2 GHz	6.2	6.3	6.4	6.6	6.7	6.95	7.1	7.35	7.4	7.5						
4 GHz	6.2	6.3	6.4	6.5	6.7	6.95	7									
7 GHz	6.2	6.2	6.3	6.4												

2 mV/div, 25 GS, Sample mode, 50 ohm, TYP						**2 mV/div, 12.5 GS, HiRes mode, 50 ohm, TYP**										
	Channel bandwidth															
Frequency	**10 GHz**	**9 GHz**	**8 GHz**	**7 GHz**	**6 GHz**	**5 GHz**	**4 GHz**	**3 GHz**	**2.5 GHz**	**2 GHz**	**1 GHz**	**500 MHz**	**350 MHz**	**250 MHz**	**200 MHz**	**20 MHz**
10 MHz	4.8	5	5.1	5.3	5.5	5.65	5.9	6.1	6.2	6.35	6.8	7.2	7.4	7.5	7.75	8.8
250 MHz	4.8	5	5.1	5.3	5.5	5.65	5.9	6.1	6.2	6.35	6.8	7.2	7.4	7.5		
1 GHz	4.8	5	5.1	5.3	5.5	5.65	5.9	6.1	6.2	6.35	6.8					
2 GHz	4.8	5	5.1	5.3	5.5	5.6	5.85	6.1	6.2	6.35						
4 GHz	4.8	5	5.1	5.3	5.5	5.6	5.8									
7 GHz	4.8	5	5.1	5.3												

50 mV/div, 25 GS, Sample mode, 50 ohm, SPEC						50 mV/div, 12.5 GS, HiRes mode, 50 ohm, SPEC										
	Channel bandwidth															
Frequency	10 GHz	9 GHz	8 GHz	7 GHz	6 GHz	5 GHz	4 GHz	3 GHz	2.5 GHz	2 GHz	1 GHz	500 MHz	350 MHz	250 MHz	200 MHz	20 MHz
10 MHz	5.83	5.97	6.06	6.15	6.32	6.7	6.9	7	7.25	7.3	7.7	7.8	8.15	8.25	8.25	8.9
250 MHz	5.83	5.97	6.06	6.15	6.32	6.65	6.85	7.1	7.05	7.1	7.4	7.8	8.1	8.2		
1 GHz	5.83	5.97	6.06	6.15	6.32	6.65	6.8	6.9	7.15	7.2	7.65					
2 GHz	5.79	5.88	5.97	6.15	6.23	6.5	6.65	6.7	6.9	7						
4 GHz	5.79	5.88	5.97	6.06	6.23	6.4	6.45									
7 GHz	5.79	5.79	5.88	5.97												

2 mV/div, 25 GS, Sample mode, 50 ohm, SPEC						2 mV/div, 12.5 GS, HiRes mode, 50 ohm, SPEC										
	Channel bandwidth															
Frequency	10 GHz	9 GHz	8 GHz	7 GHz	6 GHz	5 GHz	4 GHz	3 GHz	2.5 GHz	2 GHz	1 GHz	500 MHz	350 MHz	250 MHz	200 MHz	20 MHz
10 MHz	4.45	4.65	4.75	4.95	5.15	5.30	5.55	5.75	5.85	6.00	6.45	6.85	7.05	7.15	7.40	8.4
250 MHz	4.45	4.65	4.75	4.95	5.15	5.30	5.55	5.75	5.85	6.00	6.45	6.85	7.05	7.15		
1 GHz	4.45	4.65	4.75	4.95	5.15	5.30	5.55	5.75	5.85	6.00	6.45					
2 GHz	4.45	4.65	4.75	4.95	5.15	5.25	5.50	5.75	5.85	6.00						
4 GHz	4.45	4.65	4.75	4.95	5.15	5.25	5.45									
7 GHz	4.45	4.65	4.75	4.95												

These limits apply to all channels

50 mV/div, 12.5 GS, Sample mode, 50 ohm, TYP									50 mV/div, 6.25 GS, HiRes mode, 50 ohm, TYP							
	Channel bandwidth															
Frequency	10 GHz	9 GHz	8 GHz	7 GHz	6 GHz	5 GHz	4 GHz	3 GHz	2.5 GHz	2 GHz	1 GHz	500 MHz	350 MHz	250 MHz	200 MHz	20 MHz

Table continued…

10 MHz						6.85	7.05	7.3	7.55	7.7	8.15	8.45	8.65	8.75	8.8	9.7
250 MHz						6.8	7.05	7.25	7.5	7.65	8.05	8.5	8.8	9.1		
1 GHz						6.8	7	7.25	7.45	7.65	8					
2 GHz						6.7	7	7.15	7.4	7.55						
4 GHz						6.7	7									
7 GHz																

2 mV/div, 12.5 GS, Sample mode, 50 ohm, TYP									**2 mV/div, 6.25 GS, HiRes Mode, 50 ohm, TYP**							
	Channel bandwidth															
Frequency	**10 GHz**	**9 GHz**	**8 GHz**	**7 GHz**	**6 GHz**	**5 GHz**	**4 GHz**	**3 GHz**	**2.5 GHz**	**2 GHz**	**1 GHz**	**500 MHz**	**350 MHz**	**250 MHz**	**200 MHz**	**20 MHz**
10 MHz						5.6	5.8	6	6.15	6.3	6.75	7.2	7.4	7.5	7.75	8.8
250 MHz						5.6	5.75	6	6.15	6.3	6.75	7.2	7.4	7.5		
1 GHz						5.55	5.75	6	6.15	6.3	6.75					
2 GHz						5.55	5.75	6	6.1	6.3						
4 GHz						5.55	5.75									
7 GHz																

50 mV/div, 12.5 GS, Sample mode, 50 ohm, SPEC									**50 mV/div, 6.25 GS, HiRes mode, 50 ohm, SPEC**							
	Channel bandwidth															
Frequency	**10 GHz**	**9 GHz**	**8 GHz**	**7 GHz**	**6 GHz**	**5 GHz**	**4 GHz**	**3 GHz**	**2.5 GHz**	**2 GHz**	**1 GHz**	**500 MHz**	**350 MHz**	**250 MHz**	**200 MHz**	**20 MHz**
10 MHz						6.36	6.52	6.70	7.2	7.2	7.65	7.75	8.15	8.25	8.2	8.90
250 MHz						6.32	6.52	6.67	7	7.05	7.35	7.8	8	8.3		
1 GHz						6.32	6.48	6.67	7.1	7.2	7.65					
2 GHz						6.23	6.48	6.59	6.90	7.05						

Table continued…

4 GHz						6.23	6.48									
7 GHz																

2 mV/div, 12.5 GS, Sample mode, 50 ohm, SPEC									**2 mV/div, 6.25 GS, HiRes Mode, 50 ohm, SPEC**							
	Channel bandwidth															
Frequency	**10 GHz**	**9 GHz**	**8 GHz**	**7 GHz**	**6 GHz**	**5 GHz**	**4 GHz**	**3 GHz**	**2.5 GHz**	**2 GHz**	**1 GHz**	**500 MHz**	**350 MHz**	**250 MHz**	**200 MHz**	**20 MHz**
10 MHz						5.25	5.45	5.65	5.80	5.95	6.40	6.85	7.05	7.15	7.40	8.4
250 MHz						5.25	5.40	5.65	5.80	5.95	6.40	6.85	7.05	7.15		
1 GHz						5.20	5.40	5.65	5.80	5.95	6.40					
2 GHz						5.20	5.40	5.65	5.75	5.95						
4 GHz						5.20	5.40									
7 GHz																

Random Noise

	50 Ω, 50 GS/s, Sample mode, RMS					**50 Ω, 25 GS/s, HiRes mode, RMS**									
V/div	**10 GHz**	**9 GHz**	**8 GHz**	**7 GHz**	**6 GHz**	**5 GHz**	**4 GHz**	**3 GHz**	**2.5 GHz**	**2 GHz**	**1 GHz**	**500 MHz**	**350 MHz**	**250 MHz**	**200 MHz**	**20 MHz**
1 mV	259 uV	236 uV	216 uV	197 uV	175 uV	156 uV	138 uV	118 uV	107 uV	97.4 uV	72.2 uV	52.9 uV	45 uV	42 uV	36.2 uV	13 uV
2 mV	266 uV	242 uV	221 uV	199 uV	180 uV	158 uV	139 uV	120 uV	108 uV	98.7 uV	73.2 uV	53.6 uV	45.7 uV	42.6 uV	36.7 uV	13.2 uV
5 mV	322 uV	293 uV	271 uV	247 uV	220 uV	189 uV	165 uV	142 uV	128 uV	115 uV	84.6 uV	61.3 uV	52.2 uV	48.7 uV	41.9 uV	15 uV
10 mV	488 uV	445 uV	406 uV	370 uV	330 uV	278 uV	242 uV	203 uV	181 uV	163 uV	117 uV	84.8 uV	70.5 uV	65.8 uV	56.7 uV	20.6 uV
20 mV	850 uV	775 uV	707 uV	645 uV	581 uV	478 uV	412 uV	346 uV	309 uV	275 uV	195 uV	141 uV	116 uV	107 uV	93.2 uV	34.2 uV
50 mV	1.96 mV	1.79 mV	1.63 mV	1.5 mV	1.34 mV	1.09 mV	949 uV	790 uV	704 uV	627 uV	444 uV	325 uV	261 uV	241 uV	210 uV	79 uV
100 mV	5.05 mV	4.55 mV	4.15 mV	3.79 mV	3.38 mV	2.81 mV	2.45 mV	2.06 mV	1.83 mV	1.65 mV	1.17 mV	858 uV	705 uV	658 uV	573 uV	203 uV
1 V	38.8 mV	35.4 mV	32.6 mV	29.7 mV	26.8 mV	21.8 mV	18.8 mV	15.8 mV	13.9 mV	12.4 mV	8.78 mV	6.51 mV	5.11 mV	4.77 mV	4.15 mV	1.56 mV

	50 Ω, 25 GS/s, Sample mode, RMS					50 Ω, 12.5 GS/s, HiRes mode, RMS									
V/div	**10 GHz**	**9 GHz**	**8 GHz**	**7 GHz**	**6 GHz**	**5 GHz**	**4 GHz**	**3 GHz**	**2.5 GHz**	**2 GHz**	**1 GHz**	**500 MHz**	**350 MHz**	**250 MHz**	**200 MHz**	**20 MHz**
1 mV	281 uV	253 uV	223 uV	199 uV	179 uV	162 uV	138 uV	117 uV	108 uV	96.3 uV	77.3 uV	56 uV	47.7 uV	46.1 uV	37.9 uV	13 uV
2 mV	288 uV	260 uV	224 uV	202 uV	180 uV	164 uV	139 uV	119 uV	110 uV	97.6 uV	72.4 uV	56.2 uV	47.3 uV	46.7 uV	38 uV	13.3 uV
5 mV	374 uV	337 uV	293 uV	271 uV	233 uV	210 uV	175 uV	149 uV	133 uV	118 uV	89.6 uV	68 uV	56.5 uV	54 uV	44.4 uV	15.6 uV
10 mV	600 uV	541 uV	482 uV	440 uV	388 uV	330 uV	271 uV	226 uV	203 uV	186 uV	128 uV	91.9 uV	77.3 uV	74.7 uV	65.8 uV	22.6 uV
20 mV	1.08 mV	976 uV	890 uV	793 uV	691 uV	595 uV	486 uV	398 uV	363 uV	320 uV	226 uV	162 uV	133 uV	120 uV	106 uV	41.2 uV
50 mV	2.53 mV	2.3 mV	2.1 mV	1.85 mV	1.67 mV	1.4 mV	1.15 mV	960 uV	856 uV	745 uV	534 uV	396 uV	307 uV	280 uV	247 uV	105 uV
100 mV	6.14 mV	5.54 mV	4.88 mV	4.4 mV	3.83 mV	3.38 mV	2.71 mV	2.28 mV	2.03 mV	1.81 mV	1.33 mV	941 uV	792 uV	722 uV	666 uV	236 uV
1 V	49.9 mV	46.1 mV	42 mV	37 mV	33.4 mV	28.1 mV	23.1 mV	19.2 mV	17.1 mV	14.9 mV	10.8 mV	7.92 mV	6.14 mV	5.6 mV	4.94 mV	2.11 mV

	50 Ω, 12.5 GS/s, Sample mode, RMS			50 Ω, 6.25 GS/s, HiRes mode, RMS							
V/div	**5 GHz**	**4 GHz**	**3 GHz**	**2.5 GHz**	**2 GHz**	**1 GHz**	**500 MHz**	**350 MHz**	**250 MHz**	**200 MHz**	**20 MHz**
1 mV	162 uV	142 uV	123 uV	109 uV	99.6 uV	73.9 uV	54.8 uV	46.6 uV	43.5 uV	38.8 uV	14.7 uV
2 mV	168 uV	148 uV	127 uV	112 uV	101 uV	74.9 uV	55.5 uV	47.3 uV	44.1 uV	39.3 uV	14.8 uV
5 mV	233 uV	203 uV	173 uV	142 uV	128 uV	92.8 uV	68 uV	56.5 uV	52.8 uV	47 uV	17.7 uV
10 mV	388 uV	334 uV	281 uV	221 uV	197 uV	134 uV	97.4 uV	80.1 uV	74.7 uV	66.6 uV	25.6 uV
20 mV	715 uV	609 uV	518 uV	398 uV	350 uV	237 uV	174 uV	138 uV	129 uV	115 uV	44.6 uV
50 mV	1.71 mV	1.47 mV	1.25 mV	938 uV	836 uV	559 uV	410 uV	322 uV	300 uV	271 uV	105 uV
100 mV	3.92 mV	3.38 mV	2.84 mV	2.23 mV	1.99 mV	1.36 mV	985 uV	801 uV	747 uV	674 uV	256 uV
1 V	34.2 mV	29.4 mV	25 mV	19 mV	16.7 mV	11.1 mV	8.1 mV	6.36 mV	5.94 mV	5.35 mV	2.08 mV

1 MΩ, 12.5 GS/s, HiRes mode, RMS						
V/div	**1 GHz**	**500 MHz**	**350 MHz**	**250 MHz**	**200 MHz**	**20 MHz**
1 mV		262 uV	190 uV	153 uV	149 uV	103 uV
2 mV		285 uV	195 uV	155 uV	153 uV	103 uV
5 mV		297 uV	205 uV	161 uV	154 uV	110 uV
10 mV		334 uV	231 uV	186 uV	165 uV	141 uV
20 mV		407 uV	305 uV	257 uV	211 uV	224 uV

Table continued…

1 MΩ, 12.5 GS/s, HiRes mode, RMS						
V/div	**1 GHz**	**500 MHz**	**350 MHz**	**250 MHz**	**200 MHz**	**20 MHz**
50 mV		737 uV	553 uV	528 uV	387 uV	510 uV
100 mV		1.77 mV	1.38 mV	1.18 mV	952 uV	1.13 mV
1 V		19 mV	14.9 mV	13.6 mV	11.3 mV	11.7 mV

Random Noise (Typical)

TYP	**50 Ω, 50 GS/s, Sample mode, RMS**[4]					**50 Ω, 25 GS/s, HiRes mode, RMS**[4]									
V/div	**10 GHz**	**9 GHz**	**8 GHz**	**7 GHz**	**6 GHz**	**5 GHz**	**4 GHz**	**3 GHz**	**2.5 GHz**	**2 GHz**	**1 GHz**	**500 MHz**	**350 MHz**	**250 MHz**	**200 MHz**	**20 MHz**
1 mV	183 uV	167 uV	153 uV	139 uV	124 uV	111 uV	97.4 uV	83.8 uV	75.6 uV	68.9 uV	51.1 uV	37.5 uV	31.9 uV	28.1 uV	24.2 uV	8.68 uV
2 mV	188 uV	172 uV	156 uV	141 uV	127 uV	112 uV	98.7 uV	85 uV	76.6 uV	69.9 uV	51.8 uV	38 uV	32.3 uV	28.5 uV	24.5 uV	8.8 uV
5 mV	228 uV	208 uV	192 uV	175 uV	156 uV	134 uV	117 uV	101 uV	90.7 uV	81.7 uV	59.9 uV	43.4 uV	36.9 uV	32.5 uV	28 uV	10.1 uV
10 mV	346 uV	315 uV	287 uV	262 uV	234 uV	197 uV	171 uV	144 uV	128 uV	116 uV	82.9 uV	60 uV	49.9 uV	44 uV	37.9 uV	13.8 uV
20 mV	602 uV	549 uV	501 uV	457 uV	412 uV	338 uV	291 uV	245 uV	219 uV	195 uV	138 uV	99.9 uV	82.1 uV	71.5 uV	62.3 uV	22.9 uV
50 mV	1.39 mV	1.27 mV	1.15 mV	1.07 mV	949 uV	772 uV	672 uV	559 uV	498 uV	444 uV	314 uV	230 uV	185 uV	161 uV	140 uV	52.8 uV
100 mV	3.58 mV	3.22 mV	2.94 mV	2.68 mV	2.39 mV	1.99 mV	1.73 mV	1.46 mV	1.3 mV	1.17 mV	829 uV	607 uV	499 uV	440 uV	383 uV	136 uV
1 V	27.4 mV	25 mV	23.1 mV	21.1 mV	19 mV	15.4 mV	13.3 mV	11.2 mV	9.85 mV	8.78 mV	6.22 mV	4.61 mV	3.62 mV	3.19 mV	2.78 mV	1.04 mV

TYP	**50 Ω, 25 GS/s, Sample mode, RMS**					**50 Ω, 12.5 GS/s, HiRes mode, RMS**									
V/div	**10 GHz**	**9 GHz**	**8 GHz**	**7 GHz**	**6 GHz**	**5 GHz**	**4 GHz**	**3 GHz**	**2.5 GHz**	**2 GHz**	**1 GHz**	**500 MHz**	**350 MHz**	**250 MHz**	**200 MHz**	**20 MHz**
1 mV	199 uV	179 uV	158 uV	141 uV	127 uV	114 uV	97.4 uV	82.9 uV	76.5 uV	68.1 uV	54.8 uV	39.7 uV	33.8 uV	30.8 uV	25.3 uV	8.68 uV
2 mV	204 uV	184 uV	158 uV	143 uV	127 uV	116 uV	98.7 uV	84 uV	77.5 uV	69.1 uV	51.2 uV	39.8 uV	33.5 uV	31.2 uV	25.4 uV	8.9 uV
5 mV	264 uV	238 uV	208 uV	192 uV	165 uV	149 uV	124 uV	105 uV	93.8 uV	83.6 uV	63.4 uV	48.1 uV	40 uV	36.1 uV	29.7 uV	10.4 uV
10 mV	425 uV	383 uV	342 uV	311 uV	274 uV	234 uV	192 uV	160 uV	144 uV	131 uV	90.9 uV	65.1 uV	54.8 uV	49.9 uV	44 uV	15.1 uV
20 mV	766 uV	691 uV	630 uV	562 uV	489 uV	421 uV	344 uV	282 uV	257 uV	226 uV	160 uV	115 uV	94.3 uV	80.3 uV	70.7 uV	27.5 uV

Table continued…

[4] 50 GS sample mode and 25 GS hires mode not available in Fastacq

50 mV	1.79 mV	1.63 mV	1.49 mV	1.31 mV	1.18 mV	994 uV	817 uV	680 uV	606 uV	528 uV	378 uV	280 uV	217 uV	187 uV	165 uV	70.4 uV
100 mV	4.35 mV	3.92 mV	3.46 mV	3.11 mV	2.71 mV	2.39 mV	1.92 mV	1.62 mV	1.44 mV	1.28 mV	941 uV	666 uV	560 uV	482 uV	445 uV	158 uV
1 V	35.4 mV	32.6 mV	29.7 mV	26.2 mV	23.6 mV	19.9 mV	16.3 mV	13.6 mV	12.1 mV	10.6 mV	7.65 mV	5.6 mV	4.35 mV	3.75 mV	3.3 mV	1.41 mV

TYP	**50 Ω, 12.5 GS/s, Sample mode, RMS**			**50 Ω, 6.25 GS/s, HiRes mode, RMS**							
V/div	**5 GHz**	**4 GHz**	**3 GHz**	**2.5 GHz**	**2 GHz**	**1 GHz**	**500 MHz**	**350 MHz**	**250 MHz**	**200 MHz**	**20 MHz**
1 mV	114 uV	101 uV	86.8 uV	77.3 uV	70.5 uV	52.3 uV	38.8 uV	33 uV	29.1 uV	25.9 uV	9.85 uV
2 mV	119 uV	105 uV	90.1 uV	79.3 uV	71.5 uV	53 uV	39.3 uV	33.5 uV	29.5 uV	26.3 uV	9.87 uV
5 mV	165 uV	144 uV	122 uV	101 uV	90.7 uV	65.7 uV	48.1 uV	40 uV	35.3 uV	31.4 uV	11.8 uV
10 mV	274 uV	236 uV	199 uV	156 uV	139 uV	95.2 uV	68.9 uV	56.7 uV	49.9 uV	44.5 uV	17.1 uV
20 mV	506 uV	431 uV	367 uV	282 uV	248 uV	168 uV	123 uV	97.6 uV	86 uV	76.6 uV	29.8 uV
50 mV	1.21 mV	1.04 mV	886 uV	664 uV	592 uV	396 uV	290 uV	228 uV	201 uV	181 uV	70.4 uV
100 mV	2.78 mV	2.39 mV	2.01 mV	1.58 mV	1.41 mV	963 uV	697 uV	567 uV	499 uV	450 uV	171 uV
1 V	24.2 mV	20.8 mV	17.7 mV	13.4 mV	11.8 mV	7.82 mV	5.73 mV	4.5 mV	3.97 mV	3.58 mV	1.39 mV

Overdrive recovery time

500 ns pulse width:

50Ω	**400% Overdrive**			**2000% Overdrive**		
Vertical scale	**5%**	**1%**	**0.2%**	**5%**	**1%**	**0.2%**
2 mV / div	< 50 ns	50 ns	300 ns	—	—	—
10 mV / div	< 50 ns	50 ns	300 ns	50 ns	50 ns	400 ns
0.1 V / div	< 50 ns	50 ns	300 ns	—	—	—

100 us pulse width

50Ω	**400% Overdrive**			**2000% Overdrive**		
Vertical scale	**5%**	**1%**	**0.2%**	**5%**	**1%**	**0.2%**
2 mV / div	< 50 ns	50 ns	1 us	—	—	—
10 mV / div	< 50 ns	50 ns	1 µs	<50 ns	50 ns	150 us
0.1 V / div	< 50 ns	50 ns	1 us	—	—	—

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

Table continued…

Vertical scale	500% Overdrive			5000% Overdrive		
	5%	1%	0.2%	5%	1%	0.2%
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	---	---	---
0.1 V / div	12 µs	60 µs	2.0 ms	---	---	---

Crosstalk (Channel Isolation) - 50 Ohm

≥50 dB up to 2 GHz
≥45 dB up to 5 GHz
≥40 dB up to 10 GHz
With channels set to 200 mV/div

SFDR analog channels

SFDR analog channels, typical

A single input tone at -1 dBFS is swept from 10 MHz to bandwidth and the largest error spur is recorded.

Bandwidth	Sample rate	Acquisition mode	Vertical scale	SFDR
10 GHz	50 GS/s	Sample	50 mV/div	-45 dB
10 GHz	25 GS/s	Sample	50 mV/div	-45 dB
5 GHz	12.5 GS/s	Sample	50 mV/div	-45 dB
5 GHz	25 GS/s	Hi Res	50 mV/div	-51 dB
5 GHz	12.5 GS/s	Hi Res	50 mV/div	-51 dB
2 GHz	6.25 GS/s	Hi Res	50 mV/div	-52 dB
10 GHz	50 GS/s	Sample	2 mV/div	-42 dB
10 GHz	25 GS/s	Sample	2 mV/div	-42 dB
5 GHz	12.5 GS/s	Sample	2 mV/div	-42 dB
5 GHz	25 GS/s	Hi Res	2 mV/div	-51 dB
5 GHz	12.5 GS/s	Hi Res	2 mV/div	-51 dB
2 GHz	6.25 GS/s	Hi Res	2 mV/div	-52 dB

RF front-end

Two-tone third intercept point, typical

+25 dBm <6 GHz
+20 dBm 6 GHz to 8 GHz
12 dBm 8 GHz to 10 GHz

SFDR, typical

-60 dBc for a 1 GHz input in a 5 GHz span with a 3 GHz CF
-70 dBc at 2.35 GHz, 1.5 GHz span

EVM (256 QAM), typical

0.4% rms at 20 M Symbols/s
1.1% rms at 800 M Symbols/s
1.5% rms at 1.2 G Symbols/s
1.6% rms at 2 G Symbols/s

DANL

-163 dBm/Hz 10 MHz to 6 GHz, 1 mV/div

	-160 dBm/Hz >6 GHz to 10 GHz, 1 mV/div
Harmonic Distortion	2nd harmonic distortion at -58 dBc with a 0 dBm 1 GHz signal. 3rd harmonic distortion at -55 dBc with a 0 dBm 1 GHz signal.
Sensitivity/Noise Density, typical	-157 dBm/Hz (1 mV/div, -38 dBm, 1.0001 GHz CF, 500 kHz span, 3 kHz RBW)
Phase noise at 1 GHz, typical	-118 dBc/Hz 10 kHz offset -119 dBc/Hz 100 kHz offset -132 dBc/Hz 1 MHz offset -140 dBc/Hz 10 MHz offset
Absolute amplitude accuracy, typical	±1 dB (0-8 GHz) for max 10 GHz BW.
Noise figure, typical	11 dB
SNR/Dynamic Range, typical	112 dB with a 1 GHz signal in a 100 MHz span with 1 kHz RBW ± 20 MHz from the carrier.

Skew and delay

Digital skew, typical

Digital-to-Analog 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	< 200 ps within any TEKVPI + channel

Delay between analog channels, full bandwidth, typical	≤ 10 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 and resolution	-125 ns to +125 ns with a resolution of 40 ps (for Peak Detect and Envelope acquisition modes). -125 ns to +125 ns with a resolution of 1 ps (for all other acquisition modes).
Acquisition Modes	Sample, Peak Detect, High Res, Envelope, Average, Fast Frame

Number of digitized bits

	Sample Rate	Acquisition Mode	Digitized Bits	Channel Bandwidth
MSO64B channels 1 and 3 (2 and 4 off)	50 GS/s	Sample	8	10 GHz
	25 GS/s	Hi Res	12	5 GHz
	12.5 GS/s	Hi Res	12	5 GHz
MSO66B channels 1 and 4 (2, 3, 5, and 6 off)	6.25 GS/s	Hi Res	13	2.5 GHz
	3.125 GS/s	Hi Res	14	1 GHz
	1.5625 GS/s	Hi Res	15	500 MHz
MSO68B channels 1 and 5 (2, 3, 4, 6, 7, and 8 off)	625 MS/s	Hi Res	16	200 MHz

Table continued…

	Sample Rate	Acquisition Mode	Digitized Bits	Channel Bandwidth
MSO64B all channels MSO66B channels 1, 2, 4, and 5 (3 and 6 off) MSO68B channels 1, 2, 5, and 6 (3, 4, 7, and 8 off)	25 GS/s	Sample	8	10 GHz
	12.5 GS/s	Sample	12	10 GHz
	12.5 GS/s	Hi Res	12	5 GHz
	6.25 GS/s	Hi Res	13	2.5 GHz
	3.125 GS/s	Hi Res	14	1 GHz
	1.5625 GS/s	Hi Res	15	500 MHz
	625 MS/s	Hi Res	16	200 MHz
MSO66B all channels MSO68B all channels	12.5 GS/s	Sample	8	5 GHz
	6.25 GS/s	Sample	12	5 GHz
	3.125 GS/s	Hi Res	13	1 GHz
	1.5625 GS/s	Hi Res	14	500 MHz
	1.25 GS/s	Hi Res	15	500 MHz
	312.5 MS/s	Hi Res	16	100 MHz

Peak Detect or Envelope Mode Minimum Detectable Pulse, typical

Channels	Sample Rate	Minimum Pulse Width
MSO64B channels 1 and 3 (2 and 4 off) MSO66B channels 1 and 4 (2, 3, 5, and 6 off) MSO68B channels 1 and 5 (2,3, 4, 6, 7, and 8 off)	50 GS/s	160 ps
MSO64B channels 2 and 4 MSO66B channels 2 and 5 (3 and 6 off) MSO68B channels 2 and 6 (3, 4, 7 and 8 off)	25 GS/s	160 ps
MSO66B channels 3 and 6 MSO68B channels 3, 4, 7, and 8	12.5 GS/s	320 ps

Number of waveforms for average acquisition mode 2 to 10,240 Waveforms, default 16 waveforms

TekVPI interface

TekVPI interconnect

All analog channel inputs on the front panel conform to the TekVPI+ specification defined in the TEKPROBE, TEKCONNECT, AND TEKVPI STANDARDS specification.

Total Probe Power

80 W maximum

MSO64B

40 W maximum for channels 1 through 2 and 40 W maximum for channels 3 through 4.

MSO66B

40 W maximum for channels 1 through 3 and 40 W maximum for channels 4 through 6.

MSO68B

40 W maximum for channels 1 through 4 and 40 W maximum for channels 5 through 8.

Probe Power per Channel

5 V Supply: 300 mW (60 mA max)

12 V Supply: 20 W (1.67 A max)

Low-C Passive Probe Support

Supports TPP1000 and similar probes

Digital Probe Support

Supports TLP058 VPI+ digital probes

Probe User Interface

Probe setup menu

Probe menu button support (opens probe setup menu)

Probe warning messages and indicators

Dynamic range indication

Probe bandwidth limiting

Timebase system

✓Timebase factory tolerance

Frequency tolerance at factory calibration is ±12 ppb (parts per billion).

At Calibration, 25 °C ambient, over any ≥1 ms interval.

Timebase temperature stability

±20 PPB across the full operating range of 0 °C to 50 °C, after a sufficient soak time at the temperature.

The instrument needs to soak at a fixed temperature for an extended period of time to insure the time-base frequency is stable. The following is a worst case estimation for the frequency error versus the amount of time the instrument has been soaking at a temperature.Max error (in ppb) = ±10^[log[100/soak time(in hours)]]

For example, a 1 hour soak will have a max frequency error of ±100 ppb, but a 10 hour soak will have a max frequency error of 10 ppb.

±300 PPB/Year, and will not exceed ±2 PPM over 10 years without calibration.

Calibration will reduce this frequency error to under ±12 PPB

Frequency tolerance change at 25 °C over a periods of 1 year and 10 years.

Sample rate

Sample rate range

Channels	Sample rate (real time)	Sample rate (interpolated)
2 channels	6.25 S/s to 50 GS/s	100 GS/s to 2.5 TS/s
4 channels	6.25 S/s to 25 GS/s	50 GS/s to 2.5 TS/s

Table continued…

Channels	Sample rate (real time)	Sample rate (interpolated)
8 channels	6.25 S/s to 12.5 GS/s	25 GS/s to 2.5 TS/s

On 4-channel models, the 2 channels with 50 GS/s capability are 1 and 3 (channels 2 and 4 must be off).

On 6-channel models, the2 channels with 50 GS/s capability are 1 and 4 (channels 2, 3, 5, and 6 must be off).

On 8-channel models, the 2 channels with 50 GS/s capability are 1 and 5 (channels 2, 3, 4, 6, 7, and 8 must be off).

On 6-channel models, the 4 channels with 25 GS/s capability are 1,2, 4 and 5 (channels 3 and 6 must be off).

On 8-channel models, the 4 channels with 25 GS/s capability are 1, 2, 5, and 6 (channels 3, 4, 7, and 8 must be off).

High Res sample rate

Channels	Sample rate
2 channels	up to 25 GS/s
4 channels	up to 12.5 GS/s
8 channels	up to 6.25 GS/s

On 4-channel models, the 2 channels with 25 GS/s capability are 1 and 3 (channels 2 and 4 must be off).

On 6-channel models, the 2 channels with 25 GS/s capability are 1 and 4 (channels 2, 3, 5, and 6 must be off).

On 8-channel models, the 2 channels with 25 GS/s capability are 1 and 5 (channels 2, 3, 4, 6, 7, and 8 must be off).

On 6-channel models, the 4 channels with 12.5 GS/s capability are 1, 2, 4, and 5 (channels 3 and 6 must be off).

On 8-channel models, the 4 channels with 12.5 GS/s capability are 1, 2, 5 and 6 (channels 3, 4, 7, and 8 must be off).

Interpolated waveform rate (Sample mode):

- 2.5 TS/s
- 1 TS/s
- 500 GS/s
- 250 GS/s
- 100 GS/s
- 50 GS/s (only with a 25 GS/s or12.5 GS/s channel on)
- 25 GS/s (only with a 12.5 GS/s channel on)

Interpolated waveform rate (High Res mode):

- 2.5 TS/s
- 1 TS/s
- 500 GS/s
- 250 GS/s
- 100 GS/s
- 50 GS/s
- 25 GS/s (only with a 25 GS/s or12.5 GS/s channel on)
- 12.5 GS/sec (only with a 12.5 GS/s channel on)

Record length range

Applies to analog and digital channels. All acquisition modes are 1 G maximum record length, down to 1 k minimum record length, adjustable in 1 sample increments.

Standard: 62.5 Mpoints

Option 6-RL-1: 125 Mpoints

Option 6-RL-2: 250 Mpoints

Option 6-RL-3: 500 Mpoints

Option 6-RL-4: 1 Gpoints

Horizontal scale range

40 ps/div to 1000 s/div

The minimum horizontal scale is determined by the record length by dividing the record length by 10 (because there are 10 divisions on-screen) and then dividing by the maximum sample rate (2.5 TS/s).

40 ps/div can only be achieved with a 2.5 TS/s sample rate (maximum) and a 1000 point record length (minimum).The table below shows minimum horizontal scales for a collection of record lengths.

Record length	Minimum Horizontal Scale
1 kS	40 ps/div
10 kS	400 ps/div
100 kS	4 ns/div
1 MS	40 ns/div
10 MS	400 ns/div
62.5 MS	2.5 us/div
125 MS with optional memory length	5 us/div
250 MS with optional memory length	10 us/div
500 MS with optional memory length	20 us/div
1 GS with optional memory length	40 us/div

1000 s/div is the maximum horizontal scale which limits the acquisition length to 10000 s (2 hours, 46 minutes and 40 seconds).

Below a record length of 62.5 kS, the horizontal scale is further limited. The maximum horizontal scale can be calculated by dividing the record length by 10 (because there are 10 division on-screen) and then dividing by the minimum sample rate (6.25 S/s).The table below shows maximum horizontal scales for a collection of record length.

Record length	Maximum Horizontal Scale
1 kS	16 s/div
5 kS	80 s/div
10 kS	160 s/div
25 kS	400 s/div
50 kS	800 s/div
62.5 kS	1000 s/div

Sample jitter (Aperture uncertainty), typical

Time duration	Typical jitter
<1 µs	80 fs
<1 ms	130 fs

Delta-time measurement accuracy, typical

Delta-time measurement accuracy, typical

Formula for DTA:SR_1 = Slew Rate (1st Edge) around 1st point in measurement

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

N = RSS of input-referred noise (volts rms) and Dynamic noise estimate (volts rms).

Dynamic noise estimate* $= \sqrt{\frac{BW}{8GHz}} \times 19.9 \times 10^{-3} \times volts/div$

Note: Dynamic noise is noise that appears with a signal applied (such as distortion or interleave errors).

t_j = aperture uncertainty (sec rms—80fs for short durations)

TBA = timebase accuracy or reference frequency error (which is 20ppb)

t_p = delta-time measurement duration (sec)

$$DTA_{rms} = \sqrt{\left(\frac{N}{SR_1}\right)^2 + \left(\frac{N}{SR_2}\right)^2 + t_j{}^2} + TBA \times t_p$$

Delta Time Measurement Accuracy (DTA), reference example

These limits apply to:

- MSO64B: Channels 1 and 3
- MSO66B: Channels 1 and 4
- MSO68B: Channels 1 and 5 are the only ones used

Volts/div	BW	Sample rate	Sample mode	Frequency	Amplitude pk-pk	DTA TYP
50 mV	10 GHz	50 GHz	Sample	5.65 GHz	400 mV	327.78 fs
50 mV	8 GHz	50 GHz	Sample	4.52 GHz	400 mV	346.08 fs
50 mV	6 GHz	50 GHz	Sample	3.39 GHz	400 mV	383.01 fs
50 mV	5 GHz	25 GHz	Hi-Res	2.825 GHz	400 mV	387.37 fs
50 mV	4 GHz	25 GHz	Hi-Res	2.26 GHz	400 mV	424.08 fs
50 mV	2.5 GHz	25 GHz	Hi-Res	1.4125 GHz	400 mV	512.12 fs
50 mV	2 GHz	25 GHz	Hi-Res	1.13 GHz	400 mV	569.94 fs
50 mV	1 GHz	25 GHz	Hi-Res	565 MHz	400 mV	802.6 fs
5 mV	10 GHz	50 GHz	Sample	5.65 GHz	40 mV	486.58 fs
5 mV	8 GHz	50 GHz	Sample	4.52 GHz	40 mV	514.54 fs
5 mV	6 GHz	50 GHz	Sample	3.39 GHz	40 mV	561 fs

Table continued…

Volts/div	BW	Sample rate	Sample mode	Frequency	Amplitude pk-pk	DTA TYP
5 mV	5 GHz	25 GHz	Hi-Res	2.825 GHz	40 mV	583.91 fs
5 mV	4 GHz	25 GHz	Hi-Res	2.26 GHz	40 mV	637.27 fs
5 mV	2.5 GHz	25 GHz	Hi-Res	1.4125 GHz	40 mV	791.51 fs
5 mV	2 GHz	25 GHz	Hi-Res	1.13 GHz	40 mV	889.92 fs
5 mV	1 GHz	25 GHz	Hi-Res	565 MHz	40 mV	1.29 ps

These limits apply to:

- MSO64B: All channels
- MSO66B: Channels 1, 2, 4, and 5
- MSO68B: Channels 1, 2, 5, and 6 are the only ones used

Volts/div	BW	Sample rate	Sample mode	Frequency	Amplitude pk-pk	DTA TYP
50 mV	10 GHz	25 GHz	Sample	5.65 GHz	400 mV	397.32 fs
50 mV	8 GHz	25 GHz	Sample	4.52 GHz	400 mV	417.47 fs
50 mV	6 GHz	25 GHz	Sample	3.39 GHz	400 mV	448.57 fs
50 mV	5 GHz	12.5 GHz	Hi-Res	2.825 GHz	400 mV	460.86 fs
50 mV	4 GHz	12.5 GHz	Hi-Res	2.26 GHz	400 mV	483.23 fs
50 mV	2.5 GHz	12.5 GHz	Hi-Res	1.4125 GHz	400 mV	581.18 fs
50 mV	2 GHz	12.5 GHz	Hi-Res	1.13 GHz	400 mV	636.8 fs
50 mV	1 GHz	12.5 GHz	Hi-Res	565 MHz	400 mV	904.88 fs
5 mV	10 GHz	25 GHz	Sample	5.65 GHz	40 mV	555.49 fs
5 mV	8 GHz	25 GHz	Sample	4.52 GHz	40 mV	551.87 fs
5 mV	6 GHz	25 GHz	Sample	3.39 GHz	40 mV	589.36 fs
5 mV	5 GHz	12.5 GHz	Hi-Res	2.825 GHz	40 mV	637.71 fs
5 mV	4 GHz	12.5 GHz	Hi-Res	2.26 GHz	40 mV	668.87 fs
5 mV	2.5 GHz	12.5 GHz	Hi-Res	1.4125 GHz	40 mV	814.74 fs
5 mV	2 GHz	12.5 GHz	Hi-Res	1.13 GHz	40 mV	907.3 fs
5 mV	1 GHz	12.5 GHz	Hi-Res	565 MHz	40 mV	1.36 ps

hese limits apply to:

- MSO66B: All channels
- MSO68B: All channels are used

Volts/div	BW	Sample rate	Sample mode	Frequency	Amplitude pk-pk	DTA TYP
50 mV	5 GHz	12.5 GHz	Sample	2.825 GHz	400 mV	536.22 fs
50 mV	4 GHz	12.5 GHz	Sample	2.26 GHz	400 mV	580.12 fs
50 mV	2.5 GHz	6.25 GHz	Hi-Res	1.4125 GHz	400 mV	620.41 fs
50 mV	2 GHz	6.25 GHz	Hi-Res	1.13 GHz	400 mV	690.69 fs
50 mV	1 GHz	6.25 GHz	Hi-Res	565 MHz	400 mV	934.61 fs
5 mV	5 GHz	12.5 GHz	Sample	2.825 GHz	40 mV	698.23 fs
5 mV	4 GHz	12.5 GHz	Sample	2.26 GHz	40 mV	761.47 fs
5 mV	2.5 GHz	6.25 GHz	Hi-Res	1.4125 GHz	40 mV	864.09 fs
5 mV	2 GHz	6.25 GHz	Hi-Res	1.13 GHz	40 mV	971.89 fs
5 mV	1 GHz	6.25 GHz	Hi-Res	565 MHz	40 mV	1.4 ps

Trigger system

Trigger types

Edge, Dual Edge, Pulse Width, Timeout, Runt, Logic, Setup & Hold, Rise / Fall Time, Window, Bus, Parallel, I2C, SPI, RS-232, CAN, LIN, FlexRay, USB LS, USB FS, USB HS, Ethernet 10/100, Audio (I2S/LJ/RJ/TDM), CAN-FD, ARINC 429, MIL-STD-1553, SPMI, SENT

Trigger modes

Normal and Auto

Trigger coupling

DC, HF Reject, LF Reject, Noise Reject

Trigger holdoff range

0 ns minimum to 10 seconds maximum

Trigger level ranges, typical

Source	Range
Analog Inputs	±5 divs from center of screen
Line	N/A
AUX Input	±5 V

Time Range for Glitch, Pulse Width, Timeout, Time-qualified Runt or Time-qualified Window, Transition Time Trigger

40 ps to 20 s

Setup/Hold Violation Trigger, Setup and Hold Time Ranges

Feature	Min	Max
Setup Time	0 ns	20 s
Hold Time	0 ns	20 s
Setup + Hold Time	80 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.

Oscilloscopes Trigger position is equal to the Hold Time value.

Trigger jitter, typical

Analog Inputs

- Trigger jitter ≤ 1.5 ps RMS for Sample mode, Edge-type trigger, FastAcq, and Pulse width modes
- Trigger jitter ≤ 40 ps RMS for non-Edge-type trigger modes

Trigger Bandwidth – Edge, Pulse, Logic, typical

Model	Instrument bandwidth	Edge trigger bandwidth	Pulse, Logic trigger bandwidth
MSO6XB	10 GHz	10 GHz	4 GHz

Table continued…

Model	Instrument bandwidth	Edge trigger bandwidth	Pulse, Logic trigger bandwidth
MSO6XB	8 GHz	8 GHz	4 GHz
MSO6XB	6 GHz	6 GHz	4 GHz
MSO6XB	4 GHz, 2.5 GHz, 1 GHz	Instrument bandwidth	Instrument bandwidth

Trigger level accuracy, DC-coupled, typical

For signals having rise and fall times ≥10 ns, the limits are as follows:

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

This limit is checked by SPC at very low frequency (nearly DC).

This limit does not include frequency dependent effects, edge type trigger sensitivity not DC coupled, or trigger position error.

Set the trigger level to the desired value. Using an adjustable DC source, inject a voltage into the instrument. Adjust the voltage downward (if checking negative slope) or upward (if checking positive slope) until the scope triggers. The difference between the trigger level setting and the voltage that actually caused the trigger is the trigger level accuracy.

Edge-type Trigger Sensitivity, DC-coupled, typical

Trigger Source	Sensitivity
Any input channel, 1 MΩ path	0.5 mv/div to 0.99 mV/div – 5 mV from DC to instrument bandwidth. ≥ 1 mV/div – The greater of 5 mV or 0.7 div from DC to the less of 500 MHz or BW.
Any input channel, 50 Ω path	• 1 mV/div to 1.99 mV/div – 3.5 divisions from DC to 80% of instrument bandwidth. • 2 mV/div to 4.99 mV/div - 2 divisions from DC to 80% of instrument bandwidth. • ≥ 5 mV/div - 1.5 divisions from DC to 80% of instrument bandwidth.
Line, 90 V to 264 V line voltage at 50-60 Hz line frequency	103.5 V to 126.5 V
AUX Trigger	250 mVpp (DC - 400 MHz)

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.

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

2.0 division, at vertical setting ≥5 mV/div

Logic-type triggering, Minimum logic or Re-arm time, typical

For all vertical settings, the minimums are:

Triggering Type	Pulse Width	Re–Arm Time	Time overlap needed for 100% & No Triggering1
Logic	120 ps + trise[5]	120 ps + trise[5]	≥160 ps/ ≤-40 ps
Time-qualified logic	240 ps + trise[5]	240 ps + trise[5]	≥280 ps/ ≤-40 ps

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.

Time accuracy for pulse width and timeout triggering

The limits are as follows:

Time Range	Accuracy
320 ps to 20 s	±(40 ps + (Time-Base-Accuracy * Setting))

Time-Base-Accuracy when locked to an external source is equivalent to the accuracy of the external source.

Pulse-type Trigger, Minimum Pulse, Re-arm Time, Transition Time

The limits are as follows:

Pulse class	Minimum pulse width	Minimum rearm time
Runt	40 ps + trise[5]	40 ps + trise[5]
Time–qualified runt	40 ps + trise[5]	40 ps + trise[5]
Width	40 ps + trise[5]	40 ps + trise[5]

Trigger class	Minimum transition time	Minimum rearm time
Rise/Fall Time	40 ps + trise[5]	40 ps + trise[5]

Minimum clock pulse widths for Setup/Hold time violation trigger, typical

For all vertical settings, the minimums are:

Minimum Pulse Width, Clock Active[6]	Minimum Pulse Width, Clock Inactive[6]
User's Hold Time[7] 80 ps + trise[5]	80 ps + trise[5]

For Setup/Hold trigger to work properly, Setup + Hold must be less than the clock period.

5 trise = calculated rise time

6 Active pulse width is the width of the clock pulse from its active edge (as defined in the Clock Edge setting) to its inactive edge. Inactive pulse width is the width of the pulse from its inactive edge to its active edge.

7 User Hold Time is the number selected by the user in the "Setup & Hold Times" setting.

B Trigger after events, minimum pulse width, and maximum event frequency, typical	Minimum pulse width: 40 ps + trise[5] Maximum Event Frequency: Instrument BW
Pulse-type runt trigger sensitivities, typical	2.0 division, at vertical setting ≥5 mV/div
Pulse-type trigger width and glitch sensitivities, typical	2.0 division, at vertical setting ≥5 mV/div
B Trigger, minimum time arm, and trigger, typical	80 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	40 ps to 20 seconds. Accuracy = ±(40 ps + (Time-Base-Error * Setting))
B Trigger after events, event range	1 to 65,471
Video-type trigger formats	NTSC, PAL, and SECAM
Lowest frequency for successful operation of "Set Level to 50%" function, typical	45 Hz
Maximum Triggered Acquisition Rate, typical	Analysis/measurement mode: Analog or Digital (single channel [Analog or Digital 8-bit channel] on screen, measurements and math turned off): >40/sec FastAcq mode (Peak detect or Envelope acquisition mode, OneAnalog channel, with or without digital channel enabled): >500,000 /s FastAcq Mode (All other acq modes, One analog channel, with or without digital channel enabled): 30,000 /s Fast frame rate (50-point frames): 5,000,000/second in 25 GS/s and 2,500,00/second in 12.5 GS/s Digital channels are not capable of acquiring at the FastAcq rate, but can still be enabled and acquiring (at a slower rate) while an analog channel is in FastAcq mode.
Maximum Number of Frames in FastFrame, typical	For system memory depths up to 250 M, and for record length ≥ 1,000 points, maximum number of frames = system memory depth / record length setting. For system memory depths of 500 M, and when only channels capable of a maximum sample rate of ≥ 25 GS/s are used, maximum number of frames = system memory depth / record length setting. For system memory depths of 500 M, and when any channels capable of a maximum sample rate of 12.5 GS/s are used, maximum number of frames is ≥ 250,000.

For system memory depths of 1 G, and when only channels capable of a maximum sample rate of ≥ 25 GS/s are used, maximum number of frames ≥ system memory depth / record length setting / 2.

For system memory depths of 1 G, and when only channels capable of a maximum sample rate of 12.5 GS/s are used, maximum number of frames ≥ system memory depth / record length setting / 4.

Optional Serial Bus Interface Triggering

I^2C Bus

Trigger on: Start, Repeated Start, Stop, Missing Ack, Data, Address, or Address & Data

Data Trigger: 1 – 5 Bytes of user-specified data

Address Triggering: 7 & 10 bits of user-specified addresses supported

Maximum Data Rate: 10 Mb/s

SPI Bus

Trigger on: SS Active, Data

Data Trigger: 1 – 16 Bytes of user-specified data

Maximum Data Rate: 20 Mb/s

RS232 Bus

Trigger on: Start, End of Packet, Data, Parity Error

Bit Rate: 50 bps – 10 Mbps

Data Bits: 7, 8, or 9

Parity: None, Odd, or Even

CAN Bus

Trigger on: Start of Frame, Type of Frame, Identifier, Data, Identifier & Data, End of Frame, Missing Ack, or Bit Stuffing Error

Frame Type: Data, Remote, Error, Overload

Identifier: Standard (11 bit) and Extended (29 bit) identifiers

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 (≥).

Maximum Data Rate: 1 Mb/s

CAN-FD Bus

Trigger on Start of Frame, Type of Frame (Data, Remote, Error, or Overload), Identifier (Standard or Extended), Data (1-8 bytes), Identifier and Data, End Of Frame, Error (Missing Ack, Bit Stuffing Error, FD Form Error, Any Error) on CAN FD buses up to 16 Mb/s

LIN Bus

Trigger on: Sync, Identifier, Data, Identifier & Data, Wakeup Frame, Sleep Frame, or Error.

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.

Maximum Data Rate: 100 kb/s

Flexray Bus	Trigger on: Start of Frame, Indicator Bits, Frame ID, Cycle Count, Header Fields, Data, Frame ID & Data, End ofFrame, or Error. 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) Maximum Data Rate: 40 Mb/s
SENT Bus	Trigger on Start of Packet, Fast Channel Status and Data, Slow Channel Message ID and Data, and CRC Errors
SPMI Bus	Trigger on Sequence Start Condition, Reset, Sleep, Shutdown, Wakeup, Authenticate, Master Read, Master Write, Register Read, Register Write, Extended Register Read, Extended Register Write, Extended Register Read Long, Extended Register Write Long, Device Descriptor Block Master Read, Device Descriptor Block Slave Read, Register 0 Write, Transfer Bus Ownership, and Parity Error
Ethernet Bus	Trigger On: Start of Frame, MAC Addresses, MAC Length/Type, IP Header, TCP Header, Client Data, End of Packet, Idle, FCS (CRC) Error, MAC Q-Tag Control Information. Bit rate: 10 BASE-T, 10 Mbps; 100 BASE-TX, 100 Mbps
USB Bus	Trigger On: Sync, Handshake Packet, Special Packet, Error, Token Packet, Data Packet, Reset, Suspend, Resume, End of Packet. Data rates supported: High: 480 Mbs, Full: 12 Mbs, Low: 1.5 Mbs
Audio I^2S Bus	Trigger on: Word Select, Data 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. Maximum Data Rate: 12.5Mb/s Left Justified (LJ) Trigger on: Word Select, Data 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.

	Maximum Data Rate: 12.5Mb/s
Audio (LJ) Bus	Trigger on Word Select, Frame Sync, or Data Maximum data rate for LJ is 12.5 Mb/s
Audio (RJ) Bus	Trigger on: Word Select, Data 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. Maximum Data Rate: 12.5 Mb/s
Audio (TDM) Bus	Trigger on: Frame Sync, Data Data Trigger: 32 bits of user-specified data in a channel 1-64, 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. Maximum Data Rate: 25 Mb/s
MIL-STD-1553 Bus	Trigger on Sync, Command (Transmit/Receive Bit, Parity, Subaddress / Mode, Word Count / Mode Count, RT Address), Status (Parity, Message Error, Instrumentation, Service Request, Broadcast Command Received, Busy, Subsystem Flag, Dynamic Bus Control Acceptance, Terminal Flag), Data, Time (RT/IMG), and Error (Parity Error, Sync Error, Manchester Error, Non-contiguous Data) on MIL-STD-1553 buses
ARINC 429 Bus	Trigger on Word Start, Label, Data, Label and Data, Word End, and Error (Any Error, Parity Error, Word Error, Gap Error) on ARINC 429 buses up to 1 Mb/s

Analysis

Supported Buses	Parallel, I2C, SPI, RS-232, CAN, CAN-FD, LIN, FlexRay, USB LS, USB FS, USB HS, eUSB2, Ethernet 10/100, Audio (I^2S/LJ/RJ/TDM), ARINC 429, MIL-STD-1553, SENT, PSI5, I^3C, MDIO, SPMI, 8b/10b, NRZ, Automotive Ethernet (100Base-T1), Manchester, MIPI D-PHY, Spacewire, SVID
Available Amplitude Measurements	Amplitude, Peak-to-Peak, Mean, Top, Maximum, Positive Overshoot, RMS, Base, Minimum, Negative Overshoot, AC RMS, Area
Available Time Measurements	Period, Data Rate, Skew, Fall Time, Falling Slew Rate, Negative Duty Cycle, Hold Time, Low Time, Frequency, Positive Pulse Width, Delay, Phase, Burst Width, Time Outside Level, Duration N-Periods, Unit Interval, Negative Pulse Width, Rise Time, Rising Slew Rate Positive Duty Cycle, Setup Time, High Time
Available Jitter Measurements	TIE, Phase Noise
Measurements Available with DJA	AC Common Mode, DC Common Mode, Differential Crossover, T/nT Ratio, Bit High, Bit Low, Bit Amplitude, SSC Profile, SSC Freq Deviation, SSC Modulation Rate, Jitter Summary, RJ, RJ-sigmasigma, TJ@BER, DJ, DJ-sigmasigma, PJ, DDJ, DCD, J2, J9, Clock NPJ, SRJ, F/N, Eye Width, Eye Width@BER, Eye Height, Eye Height@BER, Eye High, Eye Low, Q-Factor
Math Waveform Sources	Analog Channels, Math Waveforms, Reference Waveforms, Measurements
Math Waveform Operators	+, - ,* , /, <, >, ≥, ≤, =, !=, AND, OR, NAND, NOR, XOR, EQV, square root, absolute value, integral, derivative, log10, ln, exponential, ceiling, floor, invert, minimum,

	maximum, sine, cosine, tangent, arcsin, arccos, arctan, radians, degrees, spectral magnitude, spectral phase, spectral real, spectral imaginary
Available Cursor Types	Waveform, V Bars, H Bars, V&H Bars
Cursor Waveform Sources	Analog channels, Digital channels, Math Waveforms, Reference Waveforms. Cursors can apply to the same waveform ("Same") or to different waveforms ("Split")
Available Plot Types	Plot menu: XY, XYZ, Eye Diagram Measurement menu: Histogram, Time Trend, Spectrum
Measurement Statistics	Mean, standard deviation, maximum, minimum, waveform count

Arbitrary function generator

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	50Ω	1MΩ
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 length 128 K Samples

Sine waveform

Sine Frequency range	0.1 Hz to 50 MHz
SIne Frequency setting resolution	0.1 Hz
Sine and Ramp Frequency accuracy	130 ppm (frequency ≤ 10 kHz) 50 ppm (frequency > 10 kHz)
Sine amplitude flatness, typical	±0.5 dB (relative to 1 kHz level) at 30 MHz ±1.0 dB (relative to1 kHz level) at 50 MHz

Sine total harmonic distortion, typical	1% for amplitude ≥ 200 mV_{pp} into 50 ohm load 2.5% for amplitude > 50 mV and < 200 mV_{pp} into 50 ohm load
Sine spurious-free dynamic range, typical	40 dB (V_{pp} ≥0.1 V); 30 dB (V_{pp} ≥0.02 V), 50 Ohm Load

Square and pulse waveform

Frequency range	0.1 Hz to 25 MHz
Frequency setting resolution	0.1 Hz
Square and Pulse Frequency Accuracy	130 ppm (frequency ≤10 KHz) 50 ppm (frequency > 10 KHz)
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
Square and Pulse 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%
Square and Pulse Pulse width resolution	100 ps
Square and Pulse 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
Square and Pulse Asymmetry, typical	±1% ±5 ns, at 50% duty cycle
Square and Pulse 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
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
Cardiac maximum frequency	500 kHz

Digital volt meter (DVM)

Measurement types	DC, AC_{RMS}+DC, AC_{RMS}, Trigger frequency Count
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**: ±3% (40 Hz to 1 kHz) with no harmonic content outside 40 Hz to 1 kHz P-TYP: AC: ±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.
Resolution	8-digits
Accuracy	For Slew rates ≥ 3 mv/ns ±(1 count + time base accuracy * input frequency) The signal must be at least 8 mV_{pp} or 2 div, whichever is greater.
Trigger frequency counter source	Any analog input channel. AC line
Trigger frequency counter max input frequency	10 Hz to maximum bandwidth of the analog channel The signal must be at least 8 mV_{pp} or 3 div, whichever is greater.

Processor system

Host processor	Intel Core i5-8400H @ 2.5 GHz (CoffeeLake 4-core), 16 GB System RAM
Windows operating system	Option 6-WIN: Microsoft Windows 10 Enterprise IoT 2016 LTSB (64 bit) The Windows operating system is available on an optional, customer-installable mass storage device.
Security options	6-SEC Option: USB and Ethernet communication ports, firmware upgrades and BIOS password protected.
Password protected I/O ports	6-SEC option enables password protection of USB and Ethernet ports from oscilloscope application. 6-SEC option has password-protected BIOS

Input/Output port specifications

Ethernet interface

An 8-pin RJ-45 connector that supports 10/100/1000 Mb/s

Oscilloscope is intended for use with unshielded twisted-pair ethernet cables (UTP).

DVI connector

A 29-pin connector; connect to show the oscilloscope display on an external monitor or projector.Maximum supported resolution, Windows: 1920 x 1200 at 60 Hz.

Maximum supported resolution, Linux: 1920 x 1080 at 60 Hz.

Only a single TMDS link is provided by the interface.

Analog VGA signaling is not provided by the interface.

VGA Connector

A 15-pin, 3-row, D-sub VGA connector

Recommended resolution: 1920x1080 at 60 Hz

DisplayPort connector

A 20-pin DisplayPort connector

Maximum supported resolution:

Windows: 2560x1440 @ 60Hz

Linux: 1920 x 1080 @ 60Hz

DP++ Adapter:Maximum supported resolution: 2560x1440 @ 60Hz

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 SuperSpeed port.

Four USB host ports on the rear of the instruments: two USB 2.0 High Speed ports and two USB 3.0 SuperSpeed ports.

One USB 3.0 SuperSpeed device port on the rear of the instrument providing USBTMC support.

Probe compensator

Output Voltage and Frequency

Output Voltage Amplitude: 2.5 V ±2% (nominally 0-2.5 V)

Output Frequency: 1 kHz ±25%

Output Source Impedance is nominally 1 kΩ

Auxiliary output, Trigger out, or Reference clock out

AUX OUT Connector and Functional Modes

A single BNC connector.

Acquisition Trigger Out, Reference Clock Out, and AFG Trigger Out.

AUX OUT Output Voltage

Voltage thresholds are listed in the following table:

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

AUX OUT Acquisition Trigger Jitter

Acquisition Trigger Out Jitter: < 50 ps standard deviation

AUX OUT Acquisition Trigger Polarity

A leading edge, which is user selectable transition from HIGH to LOW or from LOW to HIGH, marks the trigger event.

The pulse width is approximately 100 ns.

AUX OUT Reference Clock

Reference clock output can be referenced from either the internal clock reference or the external clock reference.

AUX OUT AFG Trigger

The output frequency is dependent the frequency of the AFG signal using the table below:

AFG Signal Frequency	AFG 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

External reference input

BNC interface

External reference input

Nominal input frequency

10 MHz

User must select either 10 MHz external (±1 kppm), 10 MHz external (±1ppm), or the internal reference (default) from the UI.

Frequency Variation Tolerance

Low Phase Noise Mode: 9.99999 MHz to 10.00001 MHz (±1 $_{ppm}$)

Tracking Mode: 9.99 MHz to 10.01 MHz (± 1000$_{ppm}$)*

Loop Bandwidth of external tracking mode is a function of the PLL loop maximum slew rate capability, and is not linear. The modulation deviation frequency (±Hz) is dependent upon the maximum modulation rate (Hz). For example, a deviation of ±50 Hz or less can tolerate any modulation rate. A deviation of the maximum amount specified for this mode (±10 kHz or 1 kppm) will tolerate up to 80 Hz of modulation rate. A deviation of ±500Hz will tolerate up to about 1240 Hz of modulation rate. This is based on a measured instrument response to the reference clock being modulated. Example measurement is in the below table.

Deviation (+/-Hz)	Modulation Rate (Hz)	Notes
10000	80	
5000	190	
2500	320	
1000	760	
500	1240	
250	1720	
100	2150	
50		Won't lose lock at 50Hz and below

Sensitivity, typical

Vin is 200 mV$_{p-p}$ up to 7 V$_{p-p}$, using an external 50 Ω termination on the input BNC.

Maximum input signal

7 V$_{pp}$

Impedance	745 Ω ± 20% with 18 pf ± 20% to ground at 10 MHz

AUX IN trigger input impedance

Interface	SMA
Input Impedance	50 Ω
Maximum Input Voltage	5 V_{RMS}
Trigger Skew	Trigger skew variation improves for pulse input voltages ≥1 V_{p-p}. When sample rate is ≥25 GS/s and no channels with a maximum sample rate of 12.5 GS/s (channels 3 or 6 on an MSO66B, or channels 3, 4, 7, or 8 on MSO68B) are used: 200 ps ±200 ps When sample rate is 12.5 GS/s and at least one channel with a maximum sample rate of 12.5 GS/s (channels 3 or 6 on an MSO66B, or channels 3, 4, 7, or 8 on MSO68B) is used: 7.87 ns ±200 ps
Trigger Jitter	Trigger Jitter ≤ 40 ps RMS for Sample Mode and Edge-Type Trigger Trigger Jitter ≤ 40 ps RMS for Edge-Type Trigger and FastAcq Mode
Front panel knob	Multipurpose Knob A, Multipurpose Knob B, Trigger Level, Vertical Position, Vertical Scale, Horizontal Position, Horizontal Scale, Wave Inspector (two-tier knob)
Front Panel Buttons	Run/Stop, Single/Seq, Cursors, Fast Acq, High Res, Clear, Force Trigger, Trigger Slope, Trigger Mode, Vertical Input Selection (one for each analog input), Reference Waveform, Math Waveform, Bus Waveform, Zoom, Navigate Previous, Navigate Next,Touchscreen Off, Default Setup (recessed), Save, Autoset (recessed)
Waveform Save Options	Analog Waveforms can be saved as: Reference Waveforms, .wfm files, .csv files, .h5 files, .mat files Digital Waveforms can be saved as: Reference Waveforms, .wfm files, .csv files Math Waveforms can be saved as: .wfm files, .csv files
Waveform Recall Options	Analog Waveforms can be recalled to reference waveforms from: .wfm files, .csv files, .bin (keysight format) files, .trc (LeCroy format) files, .h5 files Digital Waveforms can be recalled to reference waveforms from: .wfm files, .csvfiles Math Waveforms can be recalled to reference waveforms from: .wfm files, .csv files Reference files can be imported from .tr0 binary files.

Display system

Display type	Display size: 15.6 inches diagonal Display type: TFT liquid crystal display (LCD)
Display resolution	1,920 horizontal × 1,080 vertical pixels (High Definition)
Luminance, typical	500 cd/m^2, (Minimum: 400 cd/m^2), Display luminance is specified for a new display set at full brightness.
Color Support	16.2M colors (6-bit RGB+FRC)
Display Options	

Persistence	Off, Infinite, Variable (Persistence Time is variable) or Auto
Waveform styles	Vectors, dots
Graticule	Grid, Time, Full or None
Graticule Intensity	variable
Display Mode	Overlay or Stacked
Interpolation	Sin(x)/x or Linear
Waveform Intensity	variable

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 maintaining and reporting the current time in the units of 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.
Front Panel Memory	A 4 GB EEPROM on the LED board stores licence options and calibration data
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.
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	≥ 250 GB. Form factor is a 2.5 inch SSD with a SATA-3 interface. Waveforms and setups are stored on the solid state drive. Provides storage for saved customer data and the Linux operating system.
Windows (optional)	≥ 500 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, and saved customer data.

Power supply system

Power consumption	500 Watts maximum
Fuse rating	12.5 A / 250 VAC The fuse is not customer replaceable. The line lead is fused, but the neutral lead is not fused.

Safety characteristics

Safety certification	US NRTL Listed - UL61010-1 and UL61010-2-030. Canadian Certification - CAN/CSA-C22.2 No. 61010-1 and CAN/CSA C22.2 No. 61010-2-030. EU Compliance - Low Voltage Directive 2014-35-EU and EN61010-1 and EN61010-2-030. International Compliance - IEC 61010-1 and IEC 61010-2-030.
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, noncondensing
Non-operating	5% to 90% relative humidity (% RH) at up to +60 °C, noncondensing 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)

Dynamics

Random Vibration: Operating	0.31 GRMS, 5-500 Hz, 10 minutes per axis, 3 axes (30 minutes total).
Mechanical Shock: Operating	Half-sine mechanical shocks, 40 g peak amplitude, 11 ms duration, 3 drops in each direction of each axis (18 total).

Comparison against MIL-PRF-28800F Environmental Requirements

Comparison against MIL-PRF28800F Environmental Requirements

YES/NO indicates whether the instrument meets the minimum requirement for each combination of Class and Environmental Condition. The spec's here are those found in the MIL-PRF-28800F. The corresponding instrument spec's (if any) are listed above. If the instrument has no corresponding spec an N/A in used. If the MIL-PRF-28800F lists the spec as "invoked by the purchase description", an IPD is used

Environmental Condition	Class			
	1	2	3	4
Temperature Non-operating	No	No	No	No
	-51 °C/71 °C	-51 °C/71 °C	-40 °C/71 °C	-40 °C/71 °C
Temperature Operating	No	No	Yes	Yes
	-40 °C/55 °C	-10 °C/55 °C	0 °C/50 °C	+10 °C/40 °C
Relative Humidity	No	No	No	No
	5% to 95%, 30 °C to 40 °C	5% to 80%, 30 °C to 40 °C	5% to 80%, 30 °C to 40 °C	5% to 80%, 30 °C to 40 °C
	5% to 65%, > 40 °C	5% to 50% > 40 °C	5% to 50%, > 40 °C	5% to 50%, > 40 °C
Altitude non-operating	Yes	Yes	Yes	Yes
	4600 m	4600 m	4600 m	4600 m
Altitude operating	No	No	No	No
	4600 m	4600 m	4600 m	4600 m
Vibration **Non-Operating**	No	No	Yes	Yes
	Random	Random	Random	Random
	10-500 Hz 0.03 g2/Hz Overall GRMS: 3.83 Time/Axis: 30 minutes	10-500 Hz 0.03 g2/Hz Overall GRMS: 3.83 Time/Axis: 30 minutes	5-100 Hz 0.015 g2/Hz 100-137Hz -6dB/ octave 137-350 Hz 0.0075 g2/Hz 350-500 Hz -6 dB/ octave 500 Hz 0.0039 g2/Hz Overall GRMS: 2.09 Time/Axis: 10 minute	5-100 Hz 0.015 g2/Hz 100-137 Hz -6dB/ octave 137-350 Hz 0.0075 g2/Hz 350-500 Hz -6 dB/ octave 500 Hz 0.0039 g2/Hz Overall GRMS: 2.09 Time/Axis: 10 minutes
Bounce	N/A	N/A	N/A	N/A
	IPD	IPD	IPD	IPD

Table continued…

Environmental Condition	Class			
	1	2	3	4
Shock, Functional	Yes	Yes	Yes	Yes
	30 G Half-sine, 11 ms pulse duration, 3 shocks in each direction of each axis for 18 total shocks.	30 G Half-sine, 11 ms pulse duration, 3 shocks in each direction of each axis for 18 total shocks.	30 G Half-sine, 11ms pulse duration, 3 shocks in each direction of each axis for 18 total shocks.	30 G Half-sine, 11ms pulse duration, 3 shocks in each direction of each axis for 18 total shocks.
Transit Drop	No	No	Yes	Yes
	46 cm 10 impacts 4 bottom corners and 6 faces	30 cm 10 impacts 4 bottom corners and 6 faces	20 cm 10 impacts 4 bottom corners and 6 faces	20 cm 10 impacts 4 bottom corners and 6 faces
Bench Handling	Yes	Yes	Yes	Yes
	Lift edge of chassis 45°, 10.16 cm, or point of balance and drop	Lift edge of chassis 45°, 10.16 cm, or point of balance and drop	Lift edge of chassis 45°, 10.16 cm, or point of balance and drop	Lift edge of chassis 45°, 10.16 cm, or point of balance and drop
Shock High Impact	N/A	N/A	N/A	N/A
	IPD	IPD	IPD	IPD
Watertight	N/A	N/A	N/A	N/A
	IPD	IPD	IPD	IPD
Splash Proof	N/A	N/A	N/A	N/A
	IPD	IPD	IPD	IPD
Drip Proof	N/A	N/A	N/A	N/A
	IPD	IPD	IPD	IPD
Fungus Resistance	N/A	N/A	N/A	N/A
	28 days	28 days	28 days	28 days
Salt Exposure Enclosure	N/A	N/A	N/A	N/A
	48 hours	48 hours	48 hours	48 hours
Salt Exposure Structural	N/A	N/A	N/A	N/A
	48 hours	48 hours	48 hours	48 hours
Explosive Atmosphere	N/A	N/A	N/A	N/A
	3000m			
Dust Resistance	N/A	N/A	N/A	N/A
	10.7±7.1 g/m^3			
Solar Radiation	N/A	N/A	N/A	N/A
	IPD	IPD	IPD	IPD

Mechanical specifications

Weight

Weight of instruments by model:

- MSO68B 29.8 lbs
- MSO66B 29.6 lbs
- MSO64B 29.2 lbs
- Weight corrections of standard accessories:
- Instrument with protective front cover: + 1.8 lbs
- Instrument with front cover and soft pouch: + 3.4 lbs
- MSO68B Instrument when packaged for shipping: 42.95 lbs
- MSO66B Instrument when packaged for shipping: 42.75 lbs
- MSO64B Instrument when packaged for shipping: 42.35 lbs
- Instrument when configured for rack mount: -2.2 lbs
- Rack Mount: 15 lbs

Dimensions

Requirements that follow are nominal and unboxed:

Unit fits into rackmount configuration (7U)

Height

371 mm (14.6 in) feet folded in, handle folded up

309 mm (12.2in) feet folded in, handle folded to the backside of the instrument

Width

454 mm (17.9 in) from handle hub to handle hub

Depth

205 mm (8.0 in) from back of feet to front of knobs

297.2 mm (11.7in) feet folded in, handle folded to the backside of the instrument

Clearance Requirements

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

Audible Noise

Audible noise (fan noise) produced by the instrument at ambient temperature (≤28°C): ≤ 45dB

Kensington Lock

Oscilloscope includes a Kensington Lock.

Environmental Compliance

Material Selection - RoHS Compliance

EU Directive 2011/65/EU Less than 0.1% by mass (1000 ppm) in homogeneous material for lead, mercury, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE), and less than 0.01% by mass (100 ppm) of homogeneous material for cadmium, unless used in an application that is specifically exempted by the EU RoHS Directive or its amendments.

Complies with RoHS2 Directive 2011/65/EU.

Regional Certifications, Classifications, and Standards List

Meets intent of Directive 2014/30/EU for Electromagnetic compatibility. Compliance was demonstrated to the following specifications as listed in the Official Journal of the European Communities:

EN 61326-1, EN 61326-2-1 EMC requirements for electrical equipment for measurement, control, and laboratory use.

- CISPR 11. Radiated and conducted emissions, Group 1, Class A
- IEC 61000-4-2. Electrostatic discharge immunity
- IEC 61000-4-3. RF electromagnetic field immunity[8]
- IEC 61000-4-4. Electrical fast transient / burst immunity
- IEC 61000-4-5. Power line surge immunity
- IEC 61000-4-6. Conducted RF immunity
- IEC 61000-4-11. Voltage dips and interruptions immunity

Note:

- This product is intended for use in nonresidential areas only. Use in residential areas may cause electromagnetic interference.
- Emissions which exceed the levels required by this standard may occur when this equipment is connected to a test object.
- Equipment may not meet the immunity requirements of applicable listed standards when test leads and/or test probes are connected due to coupling of electromagnetic interference onto those leads/probes. To minimize the influence of electromagnetic interference, minimize the loop area between the unshielded portions of signal and associated return leads, and keep leads as far away as possible from electromagnetic disturbance sources. Twisting unshielded test leads together is an effective way to reduce loop area. For probes, keep the ground return lead as short as possible and close to the probe body. Some probes have accessory probe tip adapters to accomplish this most effectively. In all cases, observe all safety instructions for the probes or leads used.
- For compliance with the EMC standards listed here, high quality shielded interface cables that incorporate low impedance connection between the cable shield and the connector shell should be used.

EN 61000-3-2 AC power line harmonic emissions

EN 61000-3-3 Voltage changes, fluctuations, and flicker

Australia / New Zealand Declaration of Conformity – EMC

Complies with the EMC provision of the Radiocommunications Act per the following standard, in accordance with ACMA.

EN 61326-1 and EN 61326-2-1 Radiated and conducted emissions, Group 1, Class A.

[8] 10 mV/division to 1 V/division: ≤0.1 division waveform displacement or ≤0.2 division increase in peak-to-peak noise is allowed when the instrument is subjected to fields and signals as defined in the IEC 61000-4-3.

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 10 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
Frequency counter	parts per billion accuracy	Tektronix FCA3000 Timer/Counter/ Analyzer

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

These procedures cover all MSO64B, MSO66B, and MSO68B 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		

DC Offset Accuracy test record

Offset Accuracy					
Performance checks	Vertical scale	Vertical offset [9]	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	1.0 V	0.975 V		1.025 V
	100 mV/div	- 1.0 V	-1.025 V		-0.975 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	10.0 V	9.75 V		10.25 V
	1.01 V/div	-10.0 V	-10.25 V		-9.75 V
	5 V/div	10.0 V	8.95 V		11.05 V
	5 V/div	-10.0 V	-11.05 V		-8.95 V
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

Table continued…

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

Offset Accuracy					
Performance checks	Vertical scale	Vertical offset [9]	Low limit	Test result	High limit
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	1.0 V	0.935 V		1.065 V
	100 mV/div	- 1.0 V	-1.065 V		-0.935 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	10.0 V	9.3 V		10.7 V
	1.01 V/div	-10.0 V	-10.7 V		-9.3 V
	5 V/div	10.0 V	8.5 V		11.5 V
	5 V/div	-10.0 V	-11.5 V		-8.5 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

Table continued…

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

Offset Accuracy					
Performance checks	Vertical scale	Vertical offset [9]	Low limit	Test result	High limit
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	1.0 V	0.935 V		1.065 V
	100 mV/div	- 1.0 V	-1.065 V		-0.935 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	10.0 V	9.3 V		10.7 V
	1.01 V/div	-10.0 V	-10.7 V		-9.3 V
	5 V/div	10.0 V	8.5 V		11.5 V
	5 V/div	-10.0 V	-11.5 V		-8.5 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

Table continued…

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

Offset Accuracy					
Performance checks	Vertical scale	Vertical offset [9]	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	1.0 V	0.935 V		1.065 V
	100 mV/div	- 1.0 V	-1.065 V		-0.935 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	10.0 V	9.3 V		10.7 V
	1.01 V/div	-10.0 V	-10.7 V		-9.3 V
	5 V/div	10.0 V	8.5 V		11.5 V
	5 V/div	-10.0 V	-11.5 V		-8.5 V
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

Table continued…

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

Offset Accuracy					
Performance checks	Vertical scale	Vertical offset [9]	Low limit	Test result	High limit
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	1.0 V	0.975 V		1.025 V
	100 mV/div	- 1.0 V	-1.025 V		-0.975 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	10.0 V	9.75 V		10.25 V
	1.01 V/div	-10.0 V	-10.25 V		-9.75 V
	5 V/div	10.0 V	8.95 V		11.05 V
	5 V/div	-10.0 V	-11.05 V		-8.95 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

Table continued…

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

Offset Accuracy					
Performance checks	Vertical scale	Vertical offset [9]	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	1.0 V	0.975 V		1.025 V
	100 mV/div	- 1.0 V	-1.025 V		-0.975 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	10.0 V	9.75 V		10.25 V
	1.01 V/div	-10.0 V	-10.25 V		-9.75 V
	5 V/div	10.0 V	8.95 V		11.05 V
	5 V/div	-10.0 V	-11.05 V		-8.95 V
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

Table continued…

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

Offset Accuracy					
Performance checks	Vertical scale	Vertical offset [9]	Low limit	Test result	High limit
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	1.0 V	0.975 V		1.025 V
	100 mV/div	- 1.0 V	-1.025 V		-0.975 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	10.0 V	9.75 V		10.25 V
	1.01 V/div	-10.0 V	-10.25 V		-9.75 V
	5 V/div	10.0 V	8.95 V		11.05 V
	5 V/div	-10.0 V	-11.05 V		-8.95 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

Table continued…

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

Offset Accuracy					
Performance checks	Vertical scale	Vertical offset [9]	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	1.0 V	0.975 V		1.025 V
	100 mV/div	- 1.0 V	-1.025 V		-0.975 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	10.0 V	9.75 V		10.25 V
	1.01 V/div	-10.0 V	-10.25 V		-9.75 V
	5 V/div	10.0 V	8.95 V		11.05 V
	5 V/div	-10.0 V	-11.05 V		-8.95 V

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

Analog Bandwidth test record

Analog Bandwidth							
Performance checks							
Bandwidth at Channel	Impedance	Vertical scale	Horizontal scale	$V_{in\text{-}pp}$	$V_{bw\text{-}pp}$	Limit	Test result Gain = $V_{bw\text{-}pp}/V_{in\text{-}pp}$
All models							
Channel 1	50 Ω	1 mV/div	1 ns/div			≥ 0.707	
		2 mV/div	1 ns/div			≥ 0.707	
		4 mV/div	1 ns/div			≥ 0.707	
		10 mV/div	1 ns/div			≥ 0.707	
		25 mV/div	1 ns/div			≥ 0.707	
		50 mV/div	1 ns/div			≥ 0.707	
		100 mV/div	1 ns/div			≥ 0.707	
Channel 1	1 MΩ, typical	1 mV/div	1 ns/div			≥ 0.707	
		2 mV/div	1 ns/div			≥ 0.707	
		4 mV/div	1 ns/div			≥ 0.707	
		10 mV/div	1 ns/div			≥ 0.707	
		25 mV/div	1 ns/div			≥ 0.707	
		50 mV/div	1 ns/div			≥ 0.707	
		100 mV/div	1 ns/div			≥ 0.707	

Table continued…

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 2	50 Ω	1 mV/div	1 ns/div			≥ 0.707	
		2 mV/div	1 ns/div			≥ 0.707	
		4 mV/div	1 ns/div			≥ 0.707	
		10 mV/div	1 ns/div			≥ 0.707	
		25 mV/div	1 ns/div			≥ 0.707	
		50 mV/div	1 ns/div			≥ 0.707	
		100 mV/div	1 ns/div			≥ 0.707	
Channel 2	1 MΩ, typical	1 mV/div	1 ns/div			≥ 0.707	
		2 mV/div	1 ns/div			≥ 0.707	
		4 mV/div	1 ns/div			≥ 0.707	
		10 mV/div	1 ns/div			≥ 0.707	
		25 mV/div	1 ns/div			≥ 0.707	
		50 mV/div	1 ns/div			≥ 0.707	
		100 mV/div	1 ns/div			≥ 0.707	
Channel 3	50 Ω	1 mV/div	1 ns/div			≥ 0.707	
		2 mV/div	1 ns/div			≥ 0.707	
		4 mV/div	1 ns/div			≥ 0.707	
		10 mV/div	1 ns/div			≥ 0.707	
		25 mV/div	1 ns/div			≥ 0.707	
		50 mV/div	1 ns/div			≥ 0.707	
		100 mV/div	1 ns/div			≥ 0.707	

Table continued…

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	1 ns/div			≥ 0.707	
		2 mV/div	1 ns/div			≥ 0.707	
		4 mV/div	1 ns/div			≥ 0.707	
		10 mV/div	1 ns/div			≥ 0.707	
		25 mV/div	1 ns/div			≥ 0.707	
		50 mV/div	1 ns/div			≥ 0.707	
		100 mV/div	1 ns/div			≥ 0.707	
Channel 4	50 Ω	1 mV/div	1 ns/div			≥ 0.707	
		2 mV/div	1 ns/div			≥ 0.707	
		4 mV/div	1 ns/div			≥ 0.707	
		10 mV/div	1 ns/div			≥ 0.707	
		25 mV/div	1 ns/div			≥ 0.707	
		50 mV/div	1 ns/div			≥ 0.707	
		100 mV/div	1 ns/div			≥ 0.707	
Channel 4	1 MΩ, typical	1 mV/div	1 ns/div			≥ 0.707	
		2 mV/div	1 ns/div			≥ 0.707	
		4 mV/div	1 ns/div			≥ 0.707	
		10 mV/div	1 ns/div			≥ 0.707	
		25 mV/div	1 ns/div			≥ 0.707	
		50 mV/div	1 ns/div			≥ 0.707	
		100 mV/div	1 ns/div			≥ 0.707	

Table continued…

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 5	50 Ω	1 mV/div	1 ns/div			≥ 0.707	
		2 mV/div	1 ns/div			≥ 0.707	
		4 mV/div	1 ns/div			≥ 0.707	
		10 mV/div	1 ns/div			≥ 0.707	
		25 mV/div	1 ns/div			≥ 0.707	
		50 mV/div	1 ns/div			≥ 0.707	
		100 mV/div	1 ns/div			≥ 0.707	
Channel 5	1 MΩ, typical	1 mV/div	1 ns/div			≥ 0.707	
		2 mV/div	1 ns/div			≥ 0.707	
		4 mV/div	1 ns/div			≥ 0.707	
		10 mV/div	1 ns/div			≥ 0.707	
		25 mV/div	1 ns/div			≥ 0.707	
		50 mV/div	1 ns/div			≥ 0.707	
		100 mV/div	1 ns/div			≥ 0.707	
Channel 6	50 Ω	1 mV/div	1 ns/div			≥ 0.707	
		2 mV/div	1 ns/div			≥ 0.707	
		4 mV/div	1 ns/div			≥ 0.707	
		10 mV/div	1 ns/div			≥ 0.707	
		25 mV/div	1 ns/div			≥ 0.707	
		50 mV/div	1 ns/div			≥ 0.707	
		100 mV/div	1 ns/div			≥ 0.707	

Table continued…

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	1 ns/div			≥ 0.707	
		2 mV/div	1 ns/div			≥ 0.707	
		4 mV/div	1 ns/div			≥ 0.707	
		10 mV/div	1 ns/div			≥ 0.707	
		25 mV/div	1 ns/div			≥ 0.707	
		50 mV/div	1 ns/div			≥ 0.707	
		100 mV/div	1 ns/div			≥ 0.707	
Channel 7	50 Ω	1 mV/div	1 ns/div			≥ 0.707	
		2 mV/div	1 ns/div			≥ 0.707	
		4 mV/div	1 ns/div			≥ 0.707	
		10 mV/div	1 ns/div			≥ 0.707	
		25 mV/div	1 ns/div			≥ 0.707	
		50 mV/div	1 ns/div			≥ 0.707	
		100 mV/div	1 ns/div			≥ 0.707	
Channel 7	1 MΩ, typical	1 mV/div	1 ns/div			≥ 0.707	
		2 mV/div	1 ns/div			≥ 0.707	
		4 mV/div	1 ns/div			≥ 0.707	
		10 mV/div	1 ns/div			≥ 0.707	
		25 mV/div	1 ns/div			≥ 0.707	
		50 mV/div	1 ns/div			≥ 0.707	
		100 mV/div	1 ns/div			≥ 0.707	

Table continued…

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	50 Ω	1 mV/div	1 ns/div			≥ 0.707	
		2 mV/div	1 ns/div			≥ 0.707	
		4 mV/div	1 ns/div			≥ 0.707	
		10 mV/div	1 ns/div			≥ 0.707	
		25 mV/div	1 ns/div			≥ 0.707	
		50 mV/div	1 ns/div			≥ 0.707	
		100 mV/div	1 ns/div			≥ 0.707	
Channel 8	1 MΩ, typical	1 mV/div	1 ns/div			≥ 0.707	
		2 mV/div	1 ns/div			≥ 0.707	
		4 mV/div	1 ns/div			≥ 0.707	
		10 mV/div	1 ns/div			≥ 0.707	
		25 mV/div	1 ns/div			≥ 0.707	
		50 mV/div	1 ns/div			≥ 0.707	
		100 mV/div	1 ns/div			≥ 0.707	

Random Noise, sample acquisition mode test record

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 50 GS/s**			
	V/div	Bandwidth [10]	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B				
Channel 1	1 mV/div	10 GHz limit		259 uV
		9 GHz limit		236 uV
		8 GHz limit		216 uV
		7 GHz limit		197 uV
		6 GHz limit		175 uV
	2 mV/div	10 GHz limit		266 uV
		9 GHz limit		242 uV
		8 GHz limit		221 uV
		7 GHz limit		199 uV
		6 GHz limit		180 uV
Channel 1	5 mV/div	10 GHz limit		322 uV
		9 GHz limit		293 uV
		8 GHz limit		271 uV
		7 GHz limit		247 uV
		6 GHz limit		220 uV
	10 mV/div	10 GHz limit		488 uV
		9 GHz limit		445 uV
		8 GHz limit		406 uV
		7 GHz limit		370 uV
		6 GHz limit		330 uV

Table continued…

[10] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 50 GS/s**			
	V/div	Bandwidth [10]	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B				
Channel 1	20 mV/div	10 GHz limit		850 uV
		9 GHz limit		775 uV
		8 GHz limit		707 uV
		7 GHz limit		645 uV
		6 GHz limit		581 uV
	50 mV/div	10 GHz limit		1.96 mV
		9 GHz limit		1.79 mV
		8 GHz limit		1.63 mV
		7 GHz limit		1.5 mV
		6 GHz limit		1.34 mV
Channel 1	100 mV/div	10 GHz limit		5.05 mV
		9 GHz limit		4.55 mV
		8 GHz limit		4.15 mV
		7 GHz limit		3.79 mV
		6 GHz limit		3.38 mV
	1 V/div	10 GHz limit		38.8 mV
		9 GHz limit		35.4 mV
		8 GHz limit		32.6 mV
		7 GHz limit		29.7 mV
		6 GHz limit		26.8 mV

[10] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 25 GS/s**			
	V/div	Bandwidth [11]	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B				
Channel 1	1 mV/div	10 GHz limit		281 uV
		9 GHz limit		253 uV
		8 GHz limit		223 uV
		7 GHz limit		199 uV
		6 GHz limit		179 uV
	2 mV/div	10 GHz limit		288 uV
		9 GHz limit		260 uV
		8 GHz limit		224 uV
		7 GHz limit		202 uV
		6 GHz limit		180 uV
Channel 1	5 mV/div	10 GHz limit		374 uV
		9 GHz limit		337 uV
		8 GHz limit		293 uV
		7 GHz limit		271 uV
		6 GHz limit		233 uV
	10 mV/div	10 GHz limit		600 uV
		9 GHz limit		541 uV
		8 GHz limit		482 uV
		7 GHz limit		440 uV
		6 GHz limit		388 uV

Table continued…

[11] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 25 GS/s**			
	V/div	Bandwidth [11]	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B				
Channel 1	20 mV/div	10 GHz limit		1.08 mV
		9 GHz limit		976 uV
		8 GHz limit		890 uV
		7 GHz limit		793 uV
		6 GHz limit		691 uV
	50 mV/div	10 GHz limit		2.53 mV
		9 GHz limit		2.3 mV
		8 GHz limit		2.1 mV
		7 GHz limit		1.85 mV
		6 GHz limit		1.67 mV
Channel 1	100 mV/div	10 GHz limit		6.14 mV
		9 GHz limit		5.54 mV
		8 GHz limit		4.88 mV
		7 GHz limit		4.4 mV
		6 GHz limit		3.83 mV
	1 V/div	10 GHz limit		49.9 mV
		9 GHz limit		46.1 mV
		8 GHz limit		42 mV
		7 GHz limit		37 mV
		6 GHz limit		33.4 mV

[11] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 12.5 GS/s**			
	V/div	Bandwidth [12]	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B				
Channel 1	1 mV/div	5 GHz		162 uV
		4 GHz		142 uV
		3 GHz		123 uV
	2 mV/div	5 GHz		168 uV
		4 GHz		148 uV
		3 GHz		127 uV
Channel 1	5 mV/div	5 GHz		233 uV
		4 GHz		203 uV
		3 GHz		173 uV
	10 mV/div	5 GHz		388 uV
		4 GHz		334 uV
		3 GHz		281 uV
Channel 1	20 mV/div	5 GHz		715 uV
		4 GHz		609 uV
		3 GHz		518 uV
	50 mV/div	5 GHz		1.71 mV
		4 GHz		1.47 mV
		3 GHz		1.25 mV
Channel 1	100 mV/div	5 GHz		3.92 mV
		4 GHz		3.38 mV
		3 GHz		2.84 mV
	1 V/div	5 GHz		34.2 mV
		4 GHz		29.4 mV
		3 GHz		25 mV

[12] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 25 GS/s	
	V/div	Bandwidth [13]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B				
Channel 1	1 mV/div	500 MHz limit		262 uV
		350 MHz limit		190 uV
		250 MHz limit		153 uV
		200 MHz limit		153 uV
		20 MHz limit		102 uV
Channel 1	2 mV/div	500 MHz limit		285 uV
		350 MHz limit		195 uV
		250 MHz limit		156 uV
		200 MHz limit		153 uV
		20 MHz limit		111 uV
Channel 1	5 mV/div	500 MHz limit		311 uV
		350 MHz limit		223 uV
		250 MHz limit		183 uV
		200 MHz limit		175 uV
		20 MHz limit		140 uV
Channel 1	10 mV/div	500 MHz limit		370 uV
		350 MHz limit		281 uV
		250 MHz limit		259 uV
		200 MHz limit		242 uV
		20 MHz limit		226 uV

Table continued…

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 25 GS/s	
	V/div	Bandwidth [13]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B				
Channel 1	20 mV/div	500 MHz limit		536 uV
		350 MHz limit		473 uV
		250 MHz limit		398 uV
		200 MHz limit		398 uV
		20 MHz limit		398 uV
Channel 1	50 mV/div	500 MHz limit		1.1 mV
		350 MHz limit		896 uV
		250 MHz limit		994 uV
		200 MHz limit		994 uV
		20 MHz limit		994 uV
Channel 1	100 mV/div	500 MHz limit		2.39 mV
		350 MHz limit		2.08 mV
		250 MHz limit		1.99 mV
		200 MHz limit		1.99 mV
		20 MHz limit		1.99 mV
Channel 1	1 V/div	500 MHz limit		25.9 mV
		350 MHz limit		22.3 mV
		250 MHz limit		22.1 mV
		200 MHz limit		21.8 mV
		20 MHz limit		19.9 mV

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 12.5 GS/s	
	V/div	Bandwidth [14]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B				
Channel 1	1 mV/div	500 MHz limit		262 uV
		350 MHz limit		190 uV
		250 MHz limit		153 uV
		200 MHz limit		153 uV
		20 MHz limit		102 uV
Channel 1	2 mV/div	500 MHz limit		285 uV
		350 MHz limit		195 uV
		250 MHz limit		156 uV
		200 MHz limit		153 uV
		20 MHz limit		111 uV
Channel 1	5 mV/div	500 MHz limit		311 uV
		350 MHz limit		223 uV
		250 MHz limit		183 uV
		200 MHz limit		175 uV
		20 MHz limit		140 uV
Channel 1	10 mV/div	500 MHz limit		370 uV
		350 MHz limit		281 uV
		250 MHz limit		259 uV
		200 MHz limit		242 uV
		20 MHz limit		226 uV

Table continued…

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 12.5 GS/s	
	V/div	Bandwidth [14]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B				
Channel 1	20 mV/div	500 MHz limit		536 uV
		350 MHz limit		473 uV
		250 MHz limit		398 uV
		200 MHz limit		398 uV
		20 MHz limit		398 uV
Channel 1	50 mV/div	500 MHz limit		1.1 mV
		350 MHz limit		896 uV
		250 MHz limit		994 uV
		200 MHz limit		994 uV
		20 MHz limit		994 uV
Channel 1	100 mV/div	500 MHz limit		2.39 mV
		350 MHz limit		2.08 mV
		250 MHz limit		1.99 mV
		200 MHz limit		1.99 mV
		20 MHz limit		1.99 mV
Channel 1	1 V/div	500 MHz limit		25.9 mV
		350 MHz limit		22.3 mV
		250 MHz limit		22.1 mV
		200 MHz limit		21.8 mV
		20 MHz limit		19.9 mV

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 25 GS/s**			
	V/div	Bandwidth [16]	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B				
Channel 2	1 mV/div	10 GHz limit		281 uV
		9 GHz limit		253 uV
		8 GHz limit		223 uV
		7 GHz limit		199 uV
		6 GHz limit		179 uV
	2 mV/div	10 GHz limit		288 uV
		9 GHz limit		260 uV
		8 GHz limit		224 uV
		7 GHz limit		202 uV
		6 GHz limit		180 uV
Channel 2	5 mV/div	10 GHz limit		374 uV
		9 GHz limit		337 uV
		8 GHz limit		293 uV
		7 GHz limit		271 uV
		6 GHz limit		233 uV
	10 mV/div	10 GHz limit		600 uV
		9 GHz limit		541 uV
		8 GHz limit		482 uV
		7 GHz limit		440 uV
		6 GHz limit		388 uV

Table continued…

[16] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 25 GS/s**			
	V/div	Bandwidth [16]	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B				
Channel 2	20 mV/div	10 GHz limit		1.08 mV
		9 GHz limit		976 uV
		8 GHz limit		890 uV
		7 GHz limit		793 uV
		6 GHz limit		691 uV
	50 mV/div	10 GHz limit		2.53 mV
		9 GHz limit		2.3 mV
		8 GHz limit		2.1 mV
		7 GHz limit		1.85 mV
		6 GHz limit		1.67 mV
Channel 2	100 mV/div	10 GHz limit		6.14 mV
		9 GHz limit		5.54 mV
		8 GHz limit		4.88 mV
		7 GHz limit		4.4 mV
		6 GHz limit		3.83 mV
	1 V/div	10 GHz limit		49.9 mV
		9 GHz limit		46.1 mV
		8 GHz limit		42 mV
		7 GHz limit		37 mV
		6 GHz limit		33.4 mV

[16] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 12.5 GS/s**			
	V/div	Bandwidth [17]	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B				
Channel 2	1 mV/div	5GHz		162 uV
		4GHz		142 uV
		3GHz		123 uV
	2 mV/div	5GHz		168 uV
		4GHz		148 uV
		3GHz		127 uV
Channel 2	5 mV/div	5GHz		233 uV
		4GHz		203 uV
		3GHz		173 uV
	10 mV/div	5GHz		388 uV
		4GHz		334 uV
		3GHz		281 uV
Channel 2	20 mV/div	5GHz		715 uV
		4GHz		609 uV
		3GHz		518 uV
	50 mV/div	5GHz		1.71 mV
		4GHz		1.47 mV
		3GHz		1.25 mV
Channel 2	100 mV/div	5GHz		3.92 mV
		4GHz		3.38 mV
		3GHz		2.84 mV
	1 V/div	5GHz		34.2 mV
		4GHz		29.4 mV
		3GHz		25 mV

[17] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 25 GS/s	
	V/div	Bandwidth [18]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B				
Channel 2	1 mV/div	500 MHz limit		262 uV
		350 MHz limit		190 uV
		250 MHz limit		153 uV
		200 MHz limit		153 uV
		20 MHz limit		102 uV
Channel 2	2 mV/div	500 MHz limit		285 uV
		350 MHz limit		195 uV
		250 MHz limit		156 uV
		200 MHz limit		153 uV
		20 MHz limit		111 uV
Channel 2	5 mV/div	500 MHz limit		311 uV
		350 MHz limit		223 uV
		250 MHz limit		183 uV
		200 MHz limit		175 uV
		20 MHz limit		140 uV
Channel 2	10 mV/div	500 MHz limit		370 uV
		350 MHz limit		281 uV
		250 MHz limit		259 uV
		200 MHz limit		242 uV
		20 MHz limit		226 uV

Table continued…

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 25 GS/s	
	V/div	Bandwidth [18]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B				
Channel 2	20 mV/div	500 MHz limit		536 uV
		350 MHz limit		473 uV
		250 MHz limit		398 uV
		200 MHz limit		398 uV
		20 MHz limit		398 uV
Channel 2	50 mV/div	500 MHz limit		1.1 mV
		350 MHz limit		896 uV
		250 MHz limit		994 uV
		200 MHz limit		994 uV
		20 MHz limit		994 uV
Channel 2	100 mV/div	500 MHz limit		2.39 mV
		350 MHz limit		2.08 mV
		250 MHz limit		1.99 mV
		200 MHz limit		1.99 mV
		20 MHz limit		1.99 mV
Channel 2	1 V/div	500 MHz limit		25.9 mV
		350 MHz limit		22.3 mV
		250 MHz limit		22.1 mV
		200 MHz limit		21.8 mV
		20 MHz limit		19.9 mV

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 12.5 GS/s	
	V/div	Bandwidth [19]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B				
Channel 2	1 mV/div	500 MHz limit		262 uV
		350 MHz limit		190 uV
		250 MHz limit		153 uV
		200 MHz limit		153 uV
		20 MHz limit		102 uV
Channel 2	2 mV/div	500 MHz limit		285 uV
		350 MHz limit		195 uV
		250 MHz limit		156 uV
		200 MHz limit		153 uV
		20 MHz limit		111 uV
Channel 2	5 mV/div	500 MHz limit		311 uV
		350 MHz limit		223 uV
		250 MHz limit		183 uV
		200 MHz limit		175 uV
		20 MHz limit		140 uV
Channel 2	10 mV/div	500 MHz limit		370 uV
		350 MHz limit		281 uV
		250 MHz limit		259 uV
		200 MHz limit		242 uV
		20 MHz limit		226 uV

Table continued…

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 12.5 GS/s	
	V/div	Bandwidth [19]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B				
Channel 2	20 mV/div	500 MHz limit		536 uV
		350 MHz limit		473 uV
		250 MHz limit		398 uV
		200 MHz limit		398 uV
		20 MHz limit		398 uV
Channel 2	50 mV/div	500 MHz limit		1.1 mV
		350 MHz limit		896 uV
		250 MHz limit		994 uV
		200 MHz limit		994 uV
		20 MHz limit		994 uV
Channel 2	100 mV/div	500 MHz limit		2.39 mV
		350 MHz limit		2.08 mV
		250 MHz limit		1.99 mV
		200 MHz limit		1.99 mV
		20 MHz limit		1.99 mV
Channel 2	1 V/div	500 MHz limit		25.9 mV
		350 MHz limit		22.3 mV
		250 MHz limit		22.1 mV
		200 MHz limit		21.8 mV
		20 MHz limit		19.9 mV

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 50 GS/s**			
	V/div	Bandwidth [20]	Test result (mV)	High limit
Models: MSO64B				
Channel 3	1 mV/div	10 GHz limit		259 uV
		9 GHz limit		236 uV
		8 GHz limit		216 uV
		7 GHz limit		197 uV
		6 GHz limit		175 uV
	2 mV/div	10 GHz limit		266 uV
		9 GHz limit		242 uV
		8 GHz limit		221 uV
		7 GHz limit		199 uV
		6 GHz limit		180 uV
Channel 3	5 mV/div	10 GHz limit		322 uV
		9 GHz limit		293 uV
		8 GHz limit		271 uV
		7 GHz limit		247 uV
		6 GHz limit		220 uV
	10 mV/div	10 GHz limit		488 uV
		9 GHz limit		445 uV
		8 GHz limit		406 uV
		7 GHz limit		370 uV
		6 GHz limit		330 uV

Table continued…

[20] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 50 GS/s**			
	V/div	Bandwidth [20]	Test result (mV)	High limit
Models: MSO64B				
Channel 3	20 mV/div	10 GHz limit		850 uV
		9 GHz limit		775 uV
		8 GHz limit		707 uV
		7 GHz limit		645 uV
		6 GHz limit		581 uV
	50 mV/div	10 GHz limit		1.96 mV
		9 GHz limit		1.79 mV
		8 GHz limit		1.63 mV
		7 GHz limit		1.5 mV
		6 GHz limit		1.34 mV
Channel 3	100 mV/div	10 GHz limit		5.05 mV
		9 GHz limit		4.55 mV
		8 GHz limit		4.15 mV
		7 GHz limit		3.79 mV
		6 GHz limit		3.38 mV
	1 V/div	10 GHz limit		38.8 mV
		9 GHz limit		35.4 mV
		8 GHz limit		32.6 mV
		7 GHz limit		29.7 mV
		6 GHz limit		26.8 mV

[20] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 25 GS/s**			
	V/div	Bandwidth [21]	Test result (mV)	High limit
Models: MSO64B				
Channel 3	1 mV/div	10 GHz limit		281 uV
		9 GHz limit		253 uV
		8 GHz limit		223 uV
		7 GHz limit		199 uV
		6 GHz limit		179 uV
	2 mV/div	10 GHz limit		288 uV
		9 GHz limit		260 uV
		8 GHz limit		224 uV
		7 GHz limit		202 uV
		6 GHz limit		180 uV
Channel 3	5 mV/div	10 GHz limit		374 uV
		9 GHz limit		337 uV
		8 GHz limit		293 uV
		7 GHz limit		271 uV
		6 GHz limit		233 uV
	10 mV/div	10 GHz limit		600 uV
		9 GHz limit		541 uV
		8 GHz limit		482 uV
		7 GHz limit		440 uV
		6 GHz limit		388 uV

Table continued…

[21] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 25 GS/s**			
	V/div	Bandwidth [21]	Test result (mV)	High limit
Models: MSO64B				
Channel 3	20 mV/div	10 GHz limit		1.08 mV
		9 GHz limit		976 uV
		8 GHz limit		890 uV
		7 GHz limit		793 uV
		6 GHz limit		691 uV
	50 mV/div	10 GHz limit		2.53 mV
		9 GHz limit		2.3 mV
		8 GHz limit		2.1 mV
		7 GHz limit		1.85 mV
		6 GHz limit		1.67 mV
Channel 3	100 mV/div	10 GHz limit		6.14 mV
		9 GHz limit		5.54 mV
		8 GHz limit		4.88 mV
		7 GHz limit		4.4 mV
		6 GHz limit		3.83 mV
	1 V/div	10 GHz limit		49.9 mV
		9 GHz limit		46.1 mV
		8 GHz limit		42 mV
		7 GHz limit		37 mV
		6 GHz limit		33.4 mV

[21] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 12.5 GS/s**			
	V/div	Bandwidth [22]	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B				
Channel 3	1 mV/div	5GHz		162 uV
		4GHz		142 uV
		3GHz		123 uV
	2 mV/div	5GHz		168 uV
		4GHz		148 uV
		3GHz		127 uV
Channel 3	5 mV/div	5GHz		233 uV
		4GHz		203 uV
		3GHz		173 uV
	10 mV/div	5GHz		388 uV
		4GHz		334 uV
		3GHz		281 uV
Channel 3	20 mV/div	5GHz		715 uV
		4GHz		609 uV
		3GHz		518 uV
	50 mV/div	5GHz		1.71 mV
		4GHz		1.47 mV
		3GHz		1.25 mV
Channel 3	100 mV/div	5GHz		3.92 mV
		4GHz		3.38 mV
		3GHz		2.84 mV
	1 V/div	5GHz		34.2 mV
		4GHz		29.4 mV
		3GHz		25 mV

[22] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 25 GS/s	
	V/div	Bandwidth [23]	Test result (mV)	High limit (mV)
Models: MSO64B				
Channel 3	1 mV/div	500 MHz limit		262 uV
		350 MHz limit		190 uV
		250 MHz limit		153 uV
		200 MHz limit		153 uV
		20 MHz limit		102 uV
Channel 3	2 mV/div	500 MHz limit		285 uV
		350 MHz limit		195 uV
		250 MHz limit		156 uV
		200 MHz limit		153 uV
		20 MHz limit		111 uV
Channel 3	5 mV/div	500 MHz limit		311 uV
		350 MHz limit		223 uV
		250 MHz limit		183 uV
		200 MHz limit		175 uV
		20 MHz limit		140 uV
Channel 3	10 mV/div	500 MHz limit		370 uV
		350 MHz limit		281 uV
		250 MHz limit		259 uV
		200 MHz limit		242 uV
		20 MHz limit		226 uV

Table continued…

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 25 GS/s	
	V/div	Bandwidth [23]	Test result (mV)	High limit (mV)
Models: MSO64B				
Channel 3	20 mV/div	500 MHz limit		536 uV
		350 MHz limit		473 uV
		250 MHz limit		398 uV
		200 MHz limit		398 uV
		20 MHz limit		398 uV
Channel 3	50 mV/div	500 MHz limit		1.1 mV
		350 MHz limit		896 uV
		250 MHz limit		994 uV
		200 MHz limit		994 uV
		20 MHz limit		994 uV
Channel 3	100 mV/div	500 MHz limit		2.39 mV
		350 MHz limit		2.08 mV
		250 MHz limit		1.99 mV
		200 MHz limit		1.99 mV
		20 MHz limit		1.99 mV
Channel 3	1 V/div	500 MHz limit		25.9 mV
		350 MHz limit		22.3 mV
		250 MHz limit		22.1 mV
		200 MHz limit		21.8 mV
		20 MHz limit		19.9 mV

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 12.5 GS/s	
	V/div	Bandwidth [24]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B				
Channel 3	1 mV/div	500 MHz limit		262 uV
		350 MHz limit		190 uV
		250 MHz limit		153 uV
		200 MHz limit		153 uV
		20 MHz limit		102 uV
Channel 3	2 mV/div	500 MHz limit		285 uV
		350 MHz limit		195 uV
		250 MHz limit		156 uV
		200 MHz limit		153 uV
		20 MHz limit		111 uV
Channel 3	5 mV/div	500 MHz limit		311 uV
		350 MHz limit		223 uV
		250 MHz limit		183 uV
		200 MHz limit		175 uV
		20 MHz limit		140 uV
Channel 3	10 mV/div	500 MHz limit		370 uV
		350 MHz limit		281 uV
		250 MHz limit		259 uV
		200 MHz limit		242 uV
		20 MHz limit		226 uV

Table continued…

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 12.5 GS/s	
	V/div	Bandwidth [24]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B				
Channel 3	20 mV/div	500 MHz limit		536 uV
		350 MHz limit		473 uV
		250 MHz limit		398 uV
		200 MHz limit		398 uV
		20 MHz limit		398 uV
Channel 3	50 mV/div	500 MHz limit		1.1 mV
		350 MHz limit		896 uV
		250 MHz limit		994 uV
		200 MHz limit		994 uV
		20 MHz limit		994 uV
Channel 3	100 mV/div	500 MHz limit		2.39 mV
		350 MHz limit		2.08 mV
		250 MHz limit		1.99 mV
		200 MHz limit		1.99 mV
		20 MHz limit		1.99 mV
Channel 3	1 V/div	500 MHz limit		25.9 mV
		350 MHz limit		22.3 mV
		250 MHz limit		22.1 mV
		200 MHz limit		21.8 mV
		20 MHz limit		19.9 mV

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 50 GS/s**			
	V/div	Bandwidth [25]	Test result (mV)	High limit
Models: MSO66B				
Channel 4	1 mV/div	10 GHz limit		259 uV
		9 GHz limit		236 uV
		8 GHz limit		216 uV
		7 GHz limit		197 uV
		6 GHz limit		175 uV
	2 mV/div	10 GHz limit		266 uV
		9 GHz limit		242 uV
		8 GHz limit		221 uV
		7 GHz limit		199 uV
		6 GHz limit		180 uV
Channel 4	5 mV/div	10 GHz limit		322 uV
		9 GHz limit		293 uV
		8 GHz limit		271 uV
		7 GHz limit		247 uV
		6 GHz limit		220 uV
	10 mV/div	10 GHz limit		488 uV
		9 GHz limit		445 uV
		8 GHz limit		406 uV
		7 GHz limit		370 uV
		6 GHz limit		330 uV

Table continued…

[25] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 50 GS/s**			
	V/div	Bandwidth [25]	Test result (mV)	High limit
Models: MSO66B				
Channel 4	20 mV/div	10 GHz limit		850 uV
		9 GHz limit		775 uV
		8 GHz limit		707 uV
		7 GHz limit		645 uV
		6 GHz limit		581 uV
	50 mV/div	10 GHz limit		1.96 mV
		9 GHz limit		1.79 mV
		8 GHz limit		1.63 mV
		7 GHz limit		1.5 mV
		6 GHz limit		1.34 mV
Channel 4	100 mV/div	10 GHz limit		5.05 mV
		9 GHz limit		4.55 mV
		8 GHz limit		4.15 mV
		7 GHz limit		3.79 mV
		6 GHz limit		3.38 mV
	1 V/div	10 GHz limit		38.8 mV
		9 GHz limit		35.4 mV
		8 GHz limit		32.6 mV
		7 GHz limit		29.7 mV
		6 GHz limit		26.8 mV

[25] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 25 GS/s**			
	V/div	Bandwidth [26]	Test result (mV)	High limit
Models: MSO66B, MSO64B				
Channel 4	1 mV/div	10 GHz limit		281 uV
		9 GHz limit		253 uV
		8 GHz limit		223 uV
		7 GHz limit		199 uV
		6 GHz limit		179 uV
	2 mV/div	10 GHz limit		288 uV
		9 GHz limit		260 uV
		8 GHz limit		224 uV
		7 GHz limit		202 uV
		6 GHz limit		180 uV
Channel 4	5 mV/div	10 GHz limit		374 uV
		9 GHz limit		337 uV
		8 GHz limit		293 uV
		7 GHz limit		271 uV
		6 GHz limit		233 uV
	10 mV/div	10 GHz limit		600 uV
		9 GHz limit		541 uV
		8 GHz limit		482 uV
		7 GHz limit		440 uV
		6 GHz limit		388 uV

Table continued…

[26] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 25 GS/s**			
	V/div	Bandwidth [26]	Test result (mV)	High limit
Models: MSO66B, MSO64B				
Channel 4	20 mV/div	10 GHz limit		1.08 mV
		9 GHz limit		976 uV
		8 GHz limit		890 uV
		7 GHz limit		793 uV
		6 GHz limit		691 uV
	50 mV/div	10 GHz limit		2.53 mV
		9 GHz limit		2.3 mV
		8 GHz limit		2.1 mV
		7 GHz limit		1.85 mV
		6 GHz limit		1.67 mV
Channel 4	100 mV/div	10 GHz limit		6.14 mV
		9 GHz limit		5.54 mV
		8 GHz limit		4.88 mV
		7 GHz limit		4.4 mV
		6 GHz limit		3.83 mV
	1 V/div	10 GHz limit		49.9 mV
		9 GHz limit		46.1 mV
		8 GHz limit		42 mV
		7 GHz limit		37 mV
		6 GHz limit		33.4 mV

[26] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 12.5 GS/s**			
	V/div	Bandwidth [27]	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B				
Channel 4	1 mV/div	5GHz		162 uV
		4GHz		142 uV
		3GHz		123 uV
	2 mV/div	5GHz		168 uV
		4GHz		148 uV
		3GHz		127 uV
Channel 4	5 mV/div	5GHz		233 uV
		4GHz		203 uV
		3GHz		173 uV
	10 mV/div	5GHz		388 uV
		4GHz		334 uV
		3GHz		281 uV
Channel 4	20 mV/div	5GHz		715 uV
		4GHz		609 uV
		3GHz		518 uV
	50 mV/div	5GHz		1.71 mV
		4GHz		1.47 mV
		3GHz		1.25 mV
Channel 4	100 mV/div	5GHz		3.92 mV
		4GHz		3.38 mV
		3GHz		2.84 mV
	1 V/div	5GHz		34.2 mV
		4GHz		29.4 mV
		3GHz		25 mV

[27] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 25 GS/s	
	V/div	Bandwidth [28]	Test result (mV)	High limit (mV)
Models: MSO66B, MSO64B				
Channel 4	1 mV/div	500 MHz limit		262 uV
		350 MHz limit		190 uV
		250 MHz limit		153 uV
		200 MHz limit		153 uV
		20 MHz limit		102 uV
Channel 4	2 mV/div	500 MHz limit		285 uV
		350 MHz limit		195 uV
		250 MHz limit		156 uV
		200 MHz limit		153 uV
		20 MHz limit		111 uV
Channel 4	5 mV/div	500 MHz limit		311 uV
		350 MHz limit		223 uV
		250 MHz limit		183 uV
		200 MHz limit		175 uV
		20 MHz limit		140 uV
Channel 4	10 mV/div	500 MHz limit		370 uV
		350 MHz limit		281 uV
		250 MHz limit		259 uV
		200 MHz limit		242 uV
		20 MHz limit		226 uV

Table continued…

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 25 GS/s	
	V/div	Bandwidth [28]	Test result (mV)	High limit (mV)
Models: MSO66B, MSO64B				
Channel 4	20 mV/div	500 MHz limit		536 uV
		350 MHz limit		473 uV
		250 MHz limit		398 uV
		200 MHz limit		398 uV
		20 MHz limit		398 uV
Channel 4	50 mV/div	500 MHz limit		1.1 mV
		350 MHz limit		896 uV
		250 MHz limit		994 uV
		200 MHz limit		994 uV
		20 MHz limit		994 uV
Channel 4	100 mV/div	500 MHz limit		2.39 mV
		350 MHz limit		2.08 mV
		250 MHz limit		1.99 mV
		200 MHz limit		1.99 mV
		20 MHz limit		1.99 mV
Channel 4	1 V/div	500 MHz limit		25.9 mV
		350 MHz limit		22.3 mV
		250 MHz limit		22.1 mV
		200 MHz limit		21.8 mV
		20 MHz limit		19.9 mV

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 12.5 GS/s	
	V/div	Bandwidth [29]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B				
Channel 4	1 mV/div	500 MHz limit		262 uV
		350 MHz limit		190 uV
		250 MHz limit		153 uV
		200 MHz limit		153 uV
		20 MHz limit		102 uV
Channel 4	2 mV/div	500 MHz limit		285 uV
		350 MHz limit		195 uV
		250 MHz limit		156 uV
		200 MHz limit		153 uV
		20 MHz limit		111 uV
Channel 4	5 mV/div	500 MHz limit		311 uV
		350 MHz limit		223 uV
		250 MHz limit		183 uV
		200 MHz limit		175 uV
		20 MHz limit		140 uV
Channel 4	10 mV/div	500 MHz limit		370 uV
		350 MHz limit		281 uV
		250 MHz limit		259 uV
		200 MHz limit		242 uV
		20 MHz limit		226 uV

Table continued…

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 12.5 GS/s	
	V/div	Bandwidth [29]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B				
Channel 4	20 mV/div	500 MHz limit		536 uV
		350 MHz limit		473 uV
		250 MHz limit		398 uV
		200 MHz limit		398 uV
		20 MHz limit		398 uV
Channel 4	50 mV/div	500 MHz limit		1.1 mV
		350 MHz limit		896 uV
		250 MHz limit		994 uV
		200 MHz limit		994 uV
		20 MHz limit		994 uV
Channel 4	100 mV/div	500 MHz limit		2.39 mV
		350 MHz limit		2.08 mV
		250 MHz limit		1.99 mV
		200 MHz limit		1.99 mV
		20 MHz limit		1.99 mV
Channel 4	1 V/div	500 MHz limit		25.9 mV
		350 MHz limit		22.3 mV
		250 MHz limit		22.1 mV
		200 MHz limit		21.8 mV
		20 MHz limit		19.9 mV

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 50 GS/s**			
	V/div	Bandwidth [30]	Test result (mV)	High limit
Models: MSO68B				
Channel 5	1 mV/div	10 GHz limit		259 uV
		9 GHz limit		236 uV
		8 GHz limit		216 uV
		7 GHz limit		197 uV
		6 GHz limit		175 uV
	2 mV/div	10 GHz limit		266 uV
		9 GHz limit		242 uV
		8 GHz limit		221 uV
		7 GHz limit		199 uV
		6 GHz limit		180 uV
Channel 5	5 mV/div	10 GHz limit		322 uV
		9 GHz limit		293 uV
		8 GHz limit		271 uV
		7 GHz limit		247 uV
		6 GHz limit		220 uV
	10 mV/div	10 GHz limit		488 uV
		9 GHz limit		445 uV
		8 GHz limit		406 uV
		7 GHz limit		370 uV
		6 GHz limit		330 uV

Table continued…

[30] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 50 GS/s**			
	V/div	Bandwidth [30]	Test result (mV)	High limit
Models: MSO68B				
Channel 5	20 mV/div	10 GHz limit		850 uV
		9 GHz limit		775 uV
		8 GHz limit		707 uV
		7 GHz limit		645 uV
		6 GHz limit		581 uV
	50 mV/div	10 GHz limit		1.96 mV
		9 GHz limit		1.79 mV
		8 GHz limit		1.63 mV
		7 GHz limit		1.5 mV
		6 GHz limit		1.34 mV
Channel 5	100 mV/div	10 GHz limit		5.05 mV
		9 GHz limit		4.55 mV
		8 GHz limit		4.15 mV
		7 GHz limit		3.79 mV
		6 GHz limit		3.38 mV
	1 V/div	10 GHz limit		38.8 mV
		9 GHz limit		35.4 mV
		8 GHz limit		32.6 mV
		7 GHz limit		29.7 mV
		6 GHz limit		26.8 mV

[30] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 25 GS/s**			
	V/div	Bandwidth [31]	Test result (mV)	High limit
Models: MSO68B, MSO66B				
Channel 5	1 mV/div	10 GHz limit		281 uV
		9 GHz limit		253 uV
		8 GHz limit		223 uV
		7 GHz limit		199 uV
		6 GHz limit		179 uV
	2 mV/div	10 GHz limit		288 uV
		9 GHz limit		260 uV
		8 GHz limit		224 uV
		7 GHz limit		202 uV
		6 GHz limit		180 uV
Channel 5	5 mV/div	10 GHz limit		374 uV
		9 GHz limit		337 uV
		8 GHz limit		293 uV
		7 GHz limit		271 uV
		6 GHz limit		233 uV
	10 mV/div	10 GHz limit		600 uV
		9 GHz limit		541 uV
		8 GHz limit		482 uV
		7 GHz limit		440 uV
		6 GHz limit		388 uV

Table continued…

[31] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 25 GS/s**			
	V/div	Bandwidth [31]	Test result (mV)	High limit
Models: MSO68B, MSO66B				
Channel 5	20 mV/div	10 GHz limit		1.08 mV
		9 GHz limit		976 uV
		8 GHz limit		890 uV
		7 GHz limit		793 uV
		6 GHz limit		691 uV
	50 mV/div	10 GHz limit		2.53 mV
		9 GHz limit		2.3 mV
		8 GHz limit		2.1 mV
		7 GHz limit		1.85 mV
		6 GHz limit		1.67 mV
Channel 5	100 mV/div	10 GHz limit		6.14 mV
		9 GHz limit		5.54 mV
		8 GHz limit		4.88 mV
		7 GHz limit		4.4 mV
		6 GHz limit		3.83 mV
	1 V/div	10 GHz limit		49.9 mV
		9 GHz limit		46.1 mV
		8 GHz limit		42 mV
		7 GHz limit		37 mV
		6 GHz limit		33.4 mV

[31] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 12.5 GS/s**			
	V/div	Bandwidth [32]	Test result (mV)	High limit
Models: MSO68B, MSO66B				
Channel 5	1 mV/div	5GHz		162 uV
		4GHz		142 uV
		3GHz		123 uV
	2 mV/div	5GHz		168 uV
		4GHz		148 uV
		3GHz		127 uV
Channel 5	5 mV/div	5GHz		233 uV
		4GHz		203 uV
		3GHz		173 uV
	10 mV/div	5GHz		388 uV
		4GHz		334 uV
		3GHz		281 uV
Channel 5	20 mV/div	5GHz		715 uV
		4GHz		609 uV
		3GHz		518 uV
	50 mV/div	5GHz		1.71 mV
		4GHz		1.47 mV
		3GHz		1.25 mV
Channel 5	100 mV/div	5GHz		3.92 mV
		4GHz		3.38 mV
		3GHz		2.84 mV
	1 V/div	5GHz		34.2 mV
		4GHz		29.4 mV
		3GHz		25 mV

[32] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 25 GS/s	
	V/div	Bandwidth [33]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B				
Channel 5	1 mV/div	500 MHz limit		262 uV
		350 MHz limit		190 uV
		250 MHz limit		153 uV
		200 MHz limit		153 uV
		20 MHz limit		102 uV
Channel 5	2 mV/div	500 MHz limit		285 uV
		350 MHz limit		195 uV
		250 MHz limit		156 uV
		200 MHz limit		153 uV
		20 MHz limit		111 uV
Channel 5	5 mV/div	500 MHz limit		311 uV
		350 MHz limit		223 uV
		250 MHz limit		183 uV
		200 MHz limit		175 uV
		20 MHz limit		140 uV
Channel 5	10 mV/div	500 MHz limit		370 uV
		350 MHz limit		281 uV
		250 MHz limit		259 uV
		200 MHz limit		242 uV
		20 MHz limit		226 uV

Table continued…

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 25 GS/s	
	V/div	Bandwidth [33]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B				
Channel 5	20 mV/div	500 MHz limit		536 uV
		350 MHz limit		473 uV
		250 MHz limit		398 uV
		200 MHz limit		398 uV
		20 MHz limit		398 uV
Channel 5	50 mV/div	500 MHz limit		1.1 mV
		350 MHz limit		896 uV
		250 MHz limit		994 uV
		200 MHz limit		994 uV
		20 MHz limit		994 uV
Channel 5	100 mV/div	500 MHz limit		2.39 mV
		350 MHz limit		2.08 mV
		250 MHz limit		1.99 mV
		200 MHz limit		1.99 mV
		20 MHz limit		1.99 mV
Channel 5	1 V/div	500 MHz limit		25.9 mV
		350 MHz limit		22.3 mV
		250 MHz limit		22.1 mV
		200 MHz limit		21.8 mV
		20 MHz limit		19.9 mV

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 12.5 GS/s	
	V/div	Bandwidth [34]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B				
Channel 5	1 mV/div	500 MHz limit		262 uV
		350 MHz limit		190 uV
		250 MHz limit		153 uV
		200 MHz limit		153 uV
		20 MHz limit		102 uV
Channel 5	2 mV/div	500 MHz limit		285 uV
		350 MHz limit		195 uV
		250 MHz limit		156 uV
		200 MHz limit		153 uV
		20 MHz limit		111 uV
Channel 5	5 mV/div	500 MHz limit		311 uV
		350 MHz limit		223 uV
		250 MHz limit		183 uV
		200 MHz limit		175 uV
		20 MHz limit		140 uV
Channel 5	10 mV/div	500 MHz limit		370 uV
		350 MHz limit		281 uV
		250 MHz limit		259 uV
		200 MHz limit		242 uV
		20 MHz limit		226 uV

Table continued…

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 12.5 GS/s	
	V/div	Bandwidth [34]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B				
Channel 5	20 mV/div	500 MHz limit		536 uV
		350 MHz limit		473 uV
		250 MHz limit		398 uV
		200 MHz limit		398 uV
		20 MHz limit		398 uV
Channel 5	50 mV/div	500 MHz limit		1.1 mV
		350 MHz limit		896 uV
		250 MHz limit		994 uV
		200 MHz limit		994 uV
		20 MHz limit		994 uV
Channel 5	100 mV/div	500 MHz limit		2.39 mV
		350 MHz limit		2.08 mV
		250 MHz limit		1.99 mV
		200 MHz limit		1.99 mV
		20 MHz limit		1.99 mV
Channel 5	1 V/div	500 MHz limit		25.9 mV
		350 MHz limit		22.3 mV
		250 MHz limit		22.1 mV
		200 MHz limit		21.8 mV
		20 MHz limit		19.9 mV

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 25 GS/s**			
	V/div	Bandwidth [36]	Test result (mV)	High limit
Models: MSO68B				
Channel 6	1 mV/div	10 GHz limit		281 uV
		9 GHz limit		253 uV
		8 GHz limit		223 uV
		7 GHz limit		199 uV
		6 GHz limit		179 uV
	2 mV/div	10 GHz limit		288 uV
		9 GHz limit		260 uV
		8 GHz limit		224 uV
		7 GHz limit		202 uV
		6 GHz limit		180 uV
Channel 6	5 mV/div	10 GHz limit		374 uV
		9 GHz limit		337 uV
		8 GHz limit		293 uV
		7 GHz limit		271 uV
		6 GHz limit		233 uV
	10 mV/div	10 GHz limit		600 uV
		9 GHz limit		541 uV
		8 GHz limit		482 uV
		7 GHz limit		440 uV
		6 GHz limit		388 uV

Table continued…

[36] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 25 GS/s**			
	V/div	Bandwidth [36]	Test result (mV)	High limit
Models: MSO68B				
Channel 6	20 mV/div	10 GHz limit		1.08 mV
		9 GHz limit		976 uV
		8 GHz limit		890 uV
		7 GHz limit		793 uV
		6 GHz limit		691 uV
	50 mV/div	10 GHz limit		2.53 mV
		9 GHz limit		2.3 mV
		8 GHz limit		2.1 mV
		7 GHz limit		1.85 mV
		6 GHz limit		1.67 mV
Channel 6	100 mV/div	10 GHz limit		6.14 mV
		9 GHz limit		5.54 mV
		8 GHz limit		4.88 mV
		7 GHz limit		4.4 mV
		6 GHz limit		3.83 mV
	1 V/div	10 GHz limit		49.9 mV
		9 GHz limit		46.1 mV
		8 GHz limit		42 mV
		7 GHz limit		37 mV
		6 GHz limit		33.4 mV

[36] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 12.5 GS/s**			
	V/div	Bandwidth [37]	Test result (mV)	High limit
Models: MSO68B, MSO66B				
Channel 6	1 mV/div	5GHz		162 uV
		4GHz		142 uV
		3GHz		123 uV
	2 mV/div	5GHz		168 uV
		4GHz		148 uV
		3GHz		127 uV
Channel 6	5 mV/div	5GHz		233 uV
		4GHz		203 uV
		3GHz		173 uV
	10 mV/div	5GHz		388 uV
		4GHz		334 uV
		3GHz		281 uV
Channel 6	20 mV/div	5GHz		715 uV
		4GHz		609 uV
		3GHz		518 uV
	50 mV/div	5GHz		1.71 mV
		4GHz		1.47 mV
		3GHz		1.25 mV
Channel 6	100 mV/div	5GHz		3.92 mV
		4GHz		3.38 mV
		3GHz		2.84 mV
	1 V/div	5GHz		34.2 mV
		4GHz		29.4 mV
		3GHz		25 mV

[37] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 25 GS/s	
	V/div	Bandwidth [38]	Test result (mV)	High limit (mV)
Models: MSO68B				
Channel 6	1 mV/div	500 MHz limit		262 uV
		350 MHz limit		190 uV
		250 MHz limit		153 uV
		200 MHz limit		153 uV
		20 MHz limit		102 uV
Channel 6	2 mV/div	500 MHz limit		285 uV
		350 MHz limit		195 uV
		250 MHz limit		156 uV
		200 MHz limit		153 uV
		20 MHz limit		111 uV
Channel 6	5 mV/div	500 MHz limit		311 uV
		350 MHz limit		223 uV
		250 MHz limit		183 uV
		200 MHz limit		175 uV
		20 MHz limit		140 uV
Channel 6	10 mV/div	500 MHz limit		370 uV
		350 MHz limit		281 uV
		250 MHz limit		259 uV
		200 MHz limit		242 uV
		20 MHz limit		226 uV

Table continued…

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 25 GS/s	
	V/div	Bandwidth [38]	Test result (mV)	High limit (mV)
Models: MSO68B				
Channel 6	20 mV/div	500 MHz limit		536 uV
		350 MHz limit		473 uV
		250 MHz limit		398 uV
		200 MHz limit		398 uV
		20 MHz limit		398 uV
Channel 6	50 mV/div	500 MHz limit		1.1 mV
		350 MHz limit		896 uV
		250 MHz limit		994 uV
		200 MHz limit		994 uV
		20 MHz limit		994 uV
Channel 6	100 mV/div	500 MHz limit		2.39 mV
		350 MHz limit		2.08 mV
		250 MHz limit		1.99 mV
		200 MHz limit		1.99 mV
		20 MHz limit		1.99 mV
Channel 6	1 V/div	500 MHz limit		25.9 mV
		350 MHz limit		22.3 mV
		250 MHz limit		22.1 mV
		200 MHz limit		21.8 mV
		20 MHz limit		19.9 mV

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 12.5 GS/s	
	V/div	Bandwidth [39]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B				
Channel 6	1 mV/div	500 MHz limit		262 uV
		350 MHz limit		190 uV
		250 MHz limit		153 uV
		200 MHz limit		153 uV
		20 MHz limit		102 uV
Channel 6	2 mV/div	500 MHz limit		285 uV
		350 MHz limit		195 uV
		250 MHz limit		156 uV
		200 MHz limit		153 uV
		20 MHz limit		111 uV
Channel 6	5 mV/div	500 MHz limit		311 uV
		350 MHz limit		223 uV
		250 MHz limit		183 uV
		200 MHz limit		175 uV
		20 MHz limit		140 uV
Channel 6	10 mV/div	500 MHz limit		370 uV
		350 MHz limit		281 uV
		250 MHz limit		259 uV
		200 MHz limit		242 uV
		20 MHz limit		226 uV

Table continued…

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 12.5 GS/s	
	V/div	Bandwidth [39]	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B				
Channel 6	20 mV/div	500 MHz limit		536 uV
		350 MHz limit		473 uV
		250 MHz limit		398 uV
		200 MHz limit		398 uV
		20 MHz limit		398 uV
Channel 6	50 mV/div	500 MHz limit		1.1 mV
		350 MHz limit		896 uV
		250 MHz limit		994 uV
		200 MHz limit		994 uV
		20 MHz limit		994 uV
Channel 6	100 mV/div	500 MHz limit		2.39 mV
		350 MHz limit		2.08 mV
		250 MHz limit		1.99 mV
		200 MHz limit		1.99 mV
		20 MHz limit		1.99 mV
Channel 6	1 V/div	500 MHz limit		25.9 mV
		350 MHz limit		22.3 mV
		250 MHz limit		22.1 mV
		200 MHz limit		21.8 mV
		20 MHz limit		19.9 mV

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 12.5 GS/s**			
	V/div	Bandwidth [40]	Test result (mV)	High limit
Models: MSO68B				
Channel 7	1 mV/div	5GHz		162 uV
		4GHz		142 uV
		3GHz		123 uV
	2 mV/div	5GHz		168 uV
		4GHz		148 uV
		3GHz		127 uV
Channel 7	5 mV/div	5GHz		233 uV
		4GHz		203 uV
		3GHz		173 uV
	10 mV/div	5GHz		388 uV
		4GHz		334 uV
		3GHz		281 uV
Channel 7	20 mV/div	5GHz		715 uV
		4GHz		609 uV
		3GHz		518 uV
	50 mV/div	5GHz		1.71 mV
		4GHz		1.47 mV
		3GHz		1.25 mV
Channel 7	100 mV/div	5GHz		3.92 mV
		4GHz		3.38 mV
		3GHz		2.84 mV
	1 V/div	5GHz		34.2 mV
		4GHz		29.4 mV
		3GHz		25 mV

[40] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 12.5 GS/s	
	V/div	Bandwidth [41]	Test result (mV)	High limit (mV)
Models: MSO68B				
Channel 7	1 mV/div	500 MHz limit		262 uV
		350 MHz limit		190 uV
		250 MHz limit		153 uV
		200 MHz limit		153 uV
		20 MHz limit		102 uV
Channel 7	2 mV/div	500 MHz limit		285 uV
		350 MHz limit		195 uV
		250 MHz limit		156 uV
		200 MHz limit		153 uV
		20 MHz limit		111 uV
Channel 7	5 mV/div	500 MHz limit		311 uV
		350 MHz limit		223 uV
		250 MHz limit		183 uV
		200 MHz limit		175 uV
		20 MHz limit		140 uV
Channel 7	10 mV/div	500 MHz limit		370 uV
		350 MHz limit		281 uV
		250 MHz limit		259 uV
		200 MHz limit		242 uV
		20 MHz limit		226 uV

Table continued…

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 12.5 GS/s	
	V/div	Bandwidth [41]	Test result (mV)	High limit (mV)
Models: MSO68B				
Channel 7	20 mV/div	500 MHz limit		536 uV
		350 MHz limit		473 uV
		250 MHz limit		398 uV
		200 MHz limit		398 uV
		20 MHz limit		398 uV
Channel 7	50 mV/div	500 MHz limit		1.1 mV
		350 MHz limit		896 uV
		250 MHz limit		994 uV
		200 MHz limit		994 uV
		20 MHz limit		994 uV
Channel 7	100 mV/div	500 MHz limit		2.39 mV
		350 MHz limit		2.08 mV
		250 MHz limit		1.99 mV
		200 MHz limit		1.99 mV
		20 MHz limit		1.99 mV
Channel 7	1 V/div	500 MHz limit		25.9 mV
		350 MHz limit		22.3 mV
		250 MHz limit		22.1 mV
		200 MHz limit		21.8 mV
		20 MHz limit		19.9 mV

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks	**50 Ω, 12.5 GS/s**			
	V/div	Bandwidth [42]	Test result (mV)	High limit
Models: MSO68B				
Channel 8	1 mV/div	5GHz		162 uV
		4GHz		142 uV
		3GHz		123 uV
	2 mV/div	5GHz		168 uV
		4GHz		148 uV
		3GHz		127 uV
Channel 8	5 mV/div	5GHz		233 uV
		4GHz		203 uV
		3GHz		173 uV
	10 mV/div	5GHz		388 uV
		4GHz		334 uV
		3GHz		281 uV
Channel 8	20 mV/div	5GHz		715 uV
		4GHz		609 uV
		3GHz		518 uV
	50 mV/div	5GHz		1.71 mV
		4GHz		1.47 mV
		3GHz		1.25 mV
Channel 8	100 mV/div	5GHz		3.92 mV
		4GHz		3.38 mV
		3GHz		2.84 mV
	1 V/div	5GHz		34.2 mV
		4GHz		29.4 mV
		3GHz		25 mV

[42] Start with the highest bandwidth setting you can select.

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 12.5 GS/s	
	V/div	Bandwidth [43]	Test result (mV)	High limit (mV)
Models: MSO68B				
Channel 8	1 mV/div	500 MHz limit		262 uV
		350 MHz limit		190 uV
		250 MHz limit		153 uV
		200 MHz limit		153 uV
		20 MHz limit		102 uV
Channel 8	2 mV/div	500 MHz limit		285 uV
		350 MHz limit		195 uV
		250 MHz limit		156 uV
		200 MHz limit		153 uV
		20 MHz limit		111 uV
Channel 8	5 mV/div	500 MHz limit		311 uV
		350 MHz limit		223 uV
		250 MHz limit		183 uV
		200 MHz limit		175 uV
		20 MHz limit		140 uV
Channel 8	10 mV/div	500 MHz limit		370 uV
		350 MHz limit		281 uV
		250 MHz limit		259 uV
		200 MHz limit		242 uV
		20 MHz limit		226 uV

Table continued…

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

Random Noise, sample acquisition mode: MSO68B, MSO66B, MSO64B				
Performance checks			1 MΩ, 12.5 GS/s	
	V/div	Bandwidth [43]	Test result (mV)	High limit (mV)
Models: MSO68B				
Channel 8	20 mV/div	500 MHz limit		536 uV
		350 MHz limit		473 uV
		250 MHz limit		398 uV
		200 MHz limit		398 uV
		20 MHz limit		398 uV
Channel 8	50 mV/div	500 MHz limit		1.1 mV
		350 MHz limit		896 uV
		250 MHz limit		994 uV
		200 MHz limit		994 uV
		20 MHz limit		994 uV
Channel 8	100 mV/div	500 MHz limit		2.39 mV
		350 MHz limit		2.08 mV
		250 MHz limit		1.99 mV
		200 MHz limit		1.99 mV
		20 MHz limit		1.99 mV
Channel 8	1 V/div	500 MHz limit		25.9 mV
		350 MHz limit		22.3 mV
		250 MHz limit		22.1 mV
		200 MHz limit		21.8 mV
		20 MHz limit		19.9 mV

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

Random Noise, High Res mode test record

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [44]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 1	1 mV/div	5 GHz				156 uV
		4 GHz limit				138 uV
		3 GHz limit				118 uV
		2.5 GHz limit				107 uV
		2 GHz limit				97.4 uV
		1 GHz limit				72.2 uV
		500 MHz limit				52.9 uV
		350 MHz limit				45 uV
		250 MHz limit				42 uV
		200 MHz limit				36.2 uV
		20 MHz limit				13 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [44]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 1	2 mV/div	5 GHz				158 uV
		4 GHz limit				139 uV
		3 GHz limit				120 uV
		2.5 GHz limit				108 uV
		2 GHz limit				98.7 uV
		1 GHz limit				73.2 uV
		500 MHz limit				53.6 uV
		350 MHz limit				45.7 uV
		250 MHz limit				42.6 uV
		200 MHz limit				36.7 uV
		20 MHz limit				13.2 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [44]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 1	5 mV/div	5 GHz				189 uV
		4 GHz limit				165 uV
		3 GHz limit				142 uV
		2.5 GHz limit				128 uV
		2 GHz limit				115 uV
		1 GHz limit				84.6 uV
		500 MHz limit				61.3 uV
		350 MHz limit				52.2 uV
		250 MHz limit				48.7 uV
		200 MHz limit				41.9 uV
		20 MHz limit				15 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [44]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 1	10 mV/div	5 GHz				278 uV
		4 GHz limit				242 uV
		3 GHz limit				203 uV
		2.5 GHz limit				181 uV
		2 GHz limit				163 uV
		1 GHz limit				117 uV
		500 MHz limit				84.8 uV
		350 MHz limit				70.5 uV
		250 MHz limit				65.8 uV
		200 MHz limit				56.7 uV
		20 MHz limit				20.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [44]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 1	20 mV/div	5 GHz				478 uV
		4 GHz limit				412 uV
		3 GHz limit				346 uV
		2.5 GHz limit				309 uV
		2 GHz limit				275 uV
		1 GHz limit				195 uV
		500 MHz limit				141 uV
		350 MHz limit				116 uV
		250 MHz limit				107 uV
		200 MHz limit				93.2 uV
		20 MHz limit				34.2 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [44]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 1	50 mV/div	5 GHz				1.09 mV
		4 GHz limit				949 uV
		3 GHz limit				790 uV
		2.5 GHz limit				704 uV
		2 GHz limit				627 uV
		1 GHz limit				444 uV
		500 MHz limit				325 uV
		350 MHz limit				261 uV
		250 MHz limit				241 uV
		200 MHz limit				210 uV
		20 MHz limit				79 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [44]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 1	100 mV/div	5 GHz				2.81 mV
		4 GHz limit				2.45 mV
		3 GHz limit				2.06 mV
		2.5 GHz limit				1.83 mV
		2 GHz limit				1.65 mV
		1 GHz limit				1.17 mV
		500 MHz limit				858 uV
		350 MHz limit				705 uV
		250 MHz limit				658 uV
		200 MHz limit				573 uV
		20 MHz limit				203 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [44]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 1	1 V/div	5 GHz				21.8 mV
		4 GHz limit				18.8 mV
		3 GHz limit				15.8 mV
		2.5 GHz limit				13.9 mV
		2 GHz limit				12.4 mV
		1 GHz limit				8.78 mV
		500 MHz limit				6.51 mV
		350 MHz limit				5.11 mV
		250 MHz limit				4.77 mV
		200 MHz limit				4.15 mV
		20 MHz limit				1.56 mV

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [45]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 1	1 mV/div	5 GHz				162 uV
		4 GHz limit				138 uV
		3 GHz limit				117 uV
		2.5 GHz limit				108 uV
		2 GHz limit				96.3 uV
		1 GHz limit				77.3 uV
		500 MHz limit		262 uV		56 uV
		350 MHz limit		190 uV		47.7 uV
		250 MHz limit		153 uV		46.1 uV
		200 MHz limit		149 uV		37.9 uV
		20 MHz limit		103 uV		13 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [45]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 1	2 mV/div	5 GHz				164 uV
		4 GHz limit				139 uV
		3 GHz limit				119 uV
		2.5 GHz limit				110 uV
		2 GHz limit				97.6 uV
		1 GHz limit				72.4 uV
		500 MHz limit		285 uV		56.2 uV
		350 MHz limit		195 uV		47.3 uV
		250 MHz limit		155 uV		46.7 uV
		200 MHz limit		153 uV		38 uV
		20 MHz limit		103 uV		13.3 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [45]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 1	5 mV/div	5 GHz				210 uV
		4 GHz limit				175 uV
		3 GHz limit				149 uV
		2.5 GHz limit				133 uV
		2 GHz limit				118 uV
		1 GHz limit				89.6 uV
		500 MHz limit		297 uV		68 uV
		350 MHz limit		205 uV		56.5 uV
		250 MHz limit		161 uV		54 uV
		200 MHz limit		154 uV		44.4 uV
		20 MHz limit		110 uV		15.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [45]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 1	10 mV/div	5 GHz				330 uV
		4 GHz limit				271 uV
		3 GHz limit				226 uV
		2.5 GHz limit				203 uV
		2 GHz limit				186 uV
		1 GHz limit				128 uV
		500 MHz limit		334 uV		91.9 uV
		350 MHz limit		231 uV		77.3 uV
		250 MHz limit		186 uV		74.7 uV
		200 MHz limit		165 uV		65.8 uV
		20 MHz limit		141 uV		22.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [45]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 1	20 mV/div	5 GHz				595 uV
		4 GHz limit				486 uV
		3 GHz limit				398 uV
		2.5 GHz limit				363 uV
		2 GHz limit				320 uV
		1 GHz limit				226 uV
		500 MHz limit		407 uV		162 uV
		350 MHz limit		305 uV		133 uV
		250 MHz limit		257 uV		120 uV
		200 MHz limit		211 uV		106 uV
		20 MHz limit		224 uV		41.2 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [45]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 1	50 mV/div	5 GHz				1.4 mV
		4 GHz limit				1.15 mV
		3 GHz limit				960 uV
		2.5 GHz limit				856 uV
		2 GHz limit				745 uV
		1 GHz limit				534 uV
		500 MHz limit		737 uV		396 uV
		350 MHz limit		553 uV		307 uV
		250 MHz limit		528 uV		280 uV
		200 MHz limit		387 uV		247 uV
		20 MHz limit		510 uV		105 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [45]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 1	100 mV/div	5 GHz				3.38 mV
		4 GHz limit				2.71 mV
		3 GHz limit				2.28 mV
		2.5 GHz limit				2.03 mV
		2 GHz limit				1.81 mV
		1 GHz limit				1.33 mV
		500 MHz limit		1.77 mV		941 uV
		350 MHz limit		1.38 mV		792 uV
		250 MHz limit		1.18 mV		722 uV
		200 MHz limit		952 uV		666 uV
		20 MHz limit		1.13 mV		236 uV
Channel 1	1 V/div	5 GHz				28.1 mV
		4 GHz limit				23.1 mV
		3 GHz limit				19.2 mV
		2.5 GHz limit				17.1 mV
		2 GHz limit				14.9 mV
		1 GHz limit				10.8 mV
		500 MHz limit		19 mV		7.92 mV
		350 MHz limit		14.9 mV		6.14 mV
		250 MHz limit		13.6 mV		5.6 mV
		200 MHz limit		11.3 mV		4.94 mV
		20 MHz limit		11.7 mV		2.11 mV

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [46]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B						
Channel 1	1 mV/div	2.5 GHz limit				109 uV
		2 GHz limit				99.6 uV
		1 GHz limit				73.9 uV
		500 MHz limit				54.8 uV
		350 MHz limit				46.6 uV
		250 MHz limit				43.5 uV
		200 MHz limit				38.8 uV
		20 MHz limit				14.7 uV
Channel 1	2 mV/div	2.5 GHz limit				112 uV
		2 GHz limit				101 uV
		1 GHz limit				74.9 uV
		500 MHz limit				55.5 uV
		350 MHz limit				47.3 uV
		250 MHz limit				44.1 uV
		200 MHz limit				39.3 uV
		20 MHz limit				14.8 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [46]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B						
Channel 1	5 mV/div	2.5 GHz limit				142 uV
		2 GHz limit				128 uV
		1 GHz limit				92.8 uV
		500 MHz limit				68 uV
		350 MHz limit				56.5 uV
		250 MHz limit				52.8 uV
		200 MHz limit				47 uV
		20 MHz limit				17.7 uV
Channel 1	10 mV/div	2.5 GHz limit				221 uV
		2 GHz limit				197 uV
		1 GHz limit				134 uV
		500 MHz limit				97.4 uV
		350 MHz limit				80.1 uV
		250 MHz limit				74.7 uV
		200 MHz limit				66.6 uV
		20 MHz limit				25.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [46]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B						
Channel 1	20 mV/div	2.5 GHz limit				398uV
		2 GHz limit				350 uV
		1 GHz limit				237 uV
		500 MHz limit				174 uV
		350 MHz limit				138 uV
		250 MHz limit				129 uV
		200 MHz limit				115 uV
		20 MHz limit				44.6 uV
Channel 1	50 mV/div	2.5 GHz limit				938 uV
		2 GHz limit				836 uV
		1 GHz limit				559 uV
		500 MHz limit				410 uV
		350 MHz limit				322 uV
		250 MHz limit				300 uV
		200 MHz limit				271 uV
		20 MHz limit				105 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [46]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B						
Channel 1	100 mV/div	2.5 GHz limit				2.23 mV
		2 GHz limit				1.99 mV
		1 GHz limit				1.36 mV
		500 MHz limit				985 uV
		350 MHz limit				801 uV
		250 MHz limit				747 uV
		200 MHz limit				674 uV
		20 MHz limit				256 uV
Channel 1	1 V/div	2.5 GHz limit				19 mV
		2 GHz limit				16.7 mV
		1 GHz limit				11.1 mV
		500 MHz limit				8.1 mV
		350 MHz limit				6.36 mV
		250 MHz limit				5.94 mV
		200 MHz limit				5.35 mV
		20 MHz limit				2.08 mV

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [48]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 2	1 mV/div	5 GHz				162 uV
		4 GHz limit				138 uV
		3 GHz limit				117 uV
		2.5 GHz limit				108 uV
		2 GHz limit				96.3 uV
		1 GHz limit				77.3 uV
		500 MHz limit		262 uV		56 uV
		350 MHz limit		190 uV		47.7 uV
		250 MHz limit		153 uV		46.1 uV
		200 MHz limit		149 uV		37.9 uV
		20 MHz limit		103 uV		13 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [48]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 2	2 mV/div	5 GHz				164 uV
		4 GHz limit				139 uV
		3 GHz limit				119 uV
		2.5 GHz limit				110 uV
		2 GHz limit				97.6 uV
		1 GHz limit				72.4 uV
		500 MHz limit		285 uV		56.2 uV
		350 MHz limit		195 uV		47.3 uV
		250 MHz limit		155 uV		46.7 uV
		200 MHz limit		153 uV		38 uV
		20 MHz limit		103 uV		13.3 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [48]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 2	5 mV/div	5 GHz				210 uV
		4 GHz limit				175 uV
		3 GHz limit				149 uV
		2.5 GHz limit				133 uV
		2 GHz limit				118 uV
		1 GHz limit				89.6 uV
		500 MHz limit		297 uV		68 uV
		350 MHz limit		205 uV		56.5 uV
		250 MHz limit		161 uV		54 uV
		200 MHz limit		154 uV		44.4 uV
		20 MHz limit		110 uV		15.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [48]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 2	10 mV/div	5 GHz				330 uV
		4 GHz limit				271 uV
		3 GHz limit				226 uV
		2.5 GHz limit				203 uV
		2 GHz limit				186 uV
		1 GHz limit				128 uV
		500 MHz limit		334 uV		91.9 uV
		350 MHz limit		231 uV		77.3 uV
		250 MHz limit		186 uV		74.7 uV
		200 MHz limit		165 uV		65.8 uV
		20 MHz limit		141 uV		22.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [48]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 2	20 mV/div	5 GHz				595 uV
		4 GHz limit				486 uV
		3 GHz limit				398 uV
		2.5 GHz limit				363 uV
		2 GHz limit				320 uV
		1 GHz limit				226 uV
		500 MHz limit		407 uV		162 uV
		350 MHz limit		305 uV		133 uV
		250 MHz limit		257 uV		120 uV
		200 MHz limit		211 uV		106 uV
		20 MHz limit		224 uV		41.2 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [48]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 2	50 mV/div	5 GHz				1.4 mV
		4 GHz limit				1.15 mV
		3 GHz limit				960 uV
		2.5 GHz limit				856 uV
		2 GHz limit				745 uV
		1 GHz limit				534 uV
		500 MHz limit		737 uV		396 uV
		350 MHz limit		553 uV		307 uV
		250 MHz limit		528 uV		280 uV
		200 MHz limit		387 uV		247 uV
		20 MHz limit		510 uV		105 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [48]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 2	100 mV/div	5 GHz				3.38 mV
		4 GHz limit				2.71 mV
		3 GHz limit				2.28 mV
		2.5 GHz limit				2.03 mV
		2 GHz limit				1.81 mV
		1 GHz limit				1.33 mV
		500 MHz limit		1.77 mV		941 uV
		350 MHz limit		1.38 mV		792 uV
		250 MHz limit		1.18 mV		722 uV
		200 MHz limit		952 uV		666 uV
		20 MHz limit		1.13 mV		236 uV
Channel 2	1 V/div	5 GHz				28.1 mV
		4 GHz limit				23.1 mV
		3 GHz limit				19.2 mV
		2.5 GHz limit				17.1 mV
		2 GHz limit				14.9 mV
		1 GHz limit				10.8 mV
		500 MHz limit		19 mV		7.92 mV
		350 MHz limit		14.9 mV		6.14 mV
		250 MHz limit		13.6 mV		5.6 mV
		200 MHz limit		11.3 mV		4.94 mV
		20 MHz limit		11.7 mV		2.11 mV

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [49]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B						
Channel 2	1 mV/div	2.5 GHz limit				109 uV
		2 GHz limit				99.6 uV
		1 GHz limit				73.9 uV
		500 MHz limit				54.8 uV
		350 MHz limit				46.6 uV
		250 MHz limit				43.5 uV
		200 MHz limit				38.8 uV
		20 MHz limit				14.7 uV
Channel 2	2 mV/div	2.5 GHz limit				112 uV
		2 GHz limit				101 uV
		1 GHz limit				74.9 uV
		500 MHz limit				55.5 uV
		350 MHz limit				47.3 uV
		250 MHz limit				44.1 uV
		200 MHz limit				39.3 uV
		20 MHz limit				14.8 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [49]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B						
Channel 2	5 mV/div	2.5 GHz limit				142 uV
		2 GHz limit				128 uV
		1 GHz limit				92.8 uV
		500 MHz limit				68 uV
		350 MHz limit				56.5 uV
		250 MHz limit				52.8 uV
		200 MHz limit				47 uV
		20 MHz limit				17.7 uV
Channel 2	10 mV/div	2.5 GHz limit				221 uV
		2 GHz limit				197 uV
		1 GHz limit				134 uV
		500 MHz limit				97.4 uV
		350 MHz limit				80.1 uV
		250 MHz limit				74.7 uV
		200 MHz limit				66.6 uV
		20 MHz limit				25.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [49]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B						
Channel 2	20 mV/div	2.5 GHz limit				398uV
		2 GHz limit				350 uV
		1 GHz limit				237 uV
		500 MHz limit				174 uV
		350 MHz limit				138 uV
		250 MHz limit				129 uV
		200 MHz limit				115 uV
		20 MHz limit				44.6 uV
Channel 2	50 mV/div	2.5 GHz limit				938 uV
		2 GHz limit				836 uV
		1 GHz limit				559 uV
		500 MHz limit				410 uV
		350 MHz limit				322 uV
		250 MHz limit				300 uV
		200 MHz limit				271 uV
		20 MHz limit				105 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [49]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B						
Channel 2	100 mV/div	2.5 GHz limit				2.23 mV
		2 GHz limit				1.99 mV
		1 GHz limit				1.36 mV
		500 MHz limit				985 uV
		350 MHz limit				801 uV
		250 MHz limit				747 uV
		200 MHz limit				674 uV
		20 MHz limit				256 uV
Channel 2	1 V/div	2.5 GHz limit				19 mV
		2 GHz limit				16.7 mV
		1 GHz limit				11.1 mV
		500 MHz limit				8.1 mV
		350 MHz limit				6.36 mV
		250 MHz limit				5.94 mV
		200 MHz limit				5.35 mV
		20 MHz limit				2.08 mV

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [50]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO64B						
Channel 3	1 mV/div	5 GHz				156 uV
		4 GHz limit				138 uV
		3 GHz limit				118 uV
		2.5 GHz limit				107 uV
		2 GHz limit				97.4 uV
		1 GHz limit				72.2 uV
		500 MHz limit				52.9 uV
		350 MHz limit				45 uV
		250 MHz limit				42 uV
		200 MHz limit				36.2 uV
		20 MHz limit				13 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [50]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO64B						
Channel 3	2 mV/div	5 GHz				158 uV
		4 GHz limit				139 uV
		3 GHz limit				120 uV
		2.5 GHz limit				108 uV
		2 GHz limit				98.7 uV
		1 GHz limit				73.2 uV
		500 MHz limit				53.6 uV
		350 MHz limit				45.7 uV
		250 MHz limit				42.6 uV
		200 MHz limit				36.7 uV
		20 MHz limit				13.2 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [50]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO64B						
Channel 3	5 mV/div	5 GHz				189 uV
		4 GHz limit				165 uV
		3 GHz limit				142 uV
		2.5 GHz limit				128 uV
		2 GHz limit				115 uV
		1 GHz limit				84.6 uV
		500 MHz limit				61.3 uV
		350 MHz limit				52.2 uV
		250 MHz limit				48.7 uV
		200 MHz limit				41.9 uV
		20 MHz limit				15 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [50]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO64B						
Channel 3	10 mV/div	5 GHz				278 uV
		4 GHz limit				242 uV
		3 GHz limit				203 uV
		2.5 GHz limit				181 uV
		2 GHz limit				163 uV
		1 GHz limit				117 uV
		500 MHz limit				84.8 uV
		350 MHz limit				70.5 uV
		250 MHz limit				65.8 uV
		200 MHz limit				56.7 uV
		20 MHz limit				20.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [50]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO64B						
Channel 3	20 mV/div	5 GHz				478 uV
		4 GHz limit				412 uV
		3 GHz limit				346 uV
		2.5 GHz limit				309 uV
		2 GHz limit				275 uV
		1 GHz limit				195 uV
		500 MHz limit				141 uV
		350 MHz limit				116 uV
		250 MHz limit				107 uV
		200 MHz limit				93.2 uV
		20 MHz limit				34.2 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [50]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO64B						
Channel 3	50 mV/div	5 GHz				1.09 mV
		4 GHz limit				949 uV
		3 GHz limit				790 uV
		2.5 GHz limit				704 uV
		2 GHz limit				627 uV
		1 GHz limit				444 uV
		500 MHz limit				325 uV
		350 MHz limit				261 uV
		250 MHz limit				241 uV
		200 MHz limit				210 uV
		20 MHz limit				79 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [50]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO64B						
Channel 3	100 mV/div	5 GHz				2.81 mV
		4 GHz limit				2.45 mV
		3 GHz limit				2.06 mV
		2.5 GHz limit				1.83 mV
		2 GHz limit				1.65 mV
		1 GHz limit				1.17 mV
		500 MHz limit				858 uV
		350 MHz limit				705 uV
		250 MHz limit				658 uV
		200 MHz limit				573 uV
		20 MHz limit				203 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [50]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO64B						
Channel 3	1 V/div	5 GHz				21.8 mV
		4 GHz limit				18.8 mV
		3 GHz limit				15.8 mV
		2.5 GHz limit				13.9 mV
		2 GHz limit				12.4 mV
		1 GHz limit				8.78 mV
		500 MHz limit				6.51 mV
		350 MHz limit				5.11 mV
		250 MHz limit				4.77 mV
		200 MHz limit				4.15 mV
		20 MHz limit				1.56 mV

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [51]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 3	1 mV/div	5 GHz				162 uV
		4 GHz limit				138 uV
		3 GHz limit				117 uV
		2.5 GHz limit				108 uV
		2 GHz limit				96.3 uV
		1 GHz limit				77.3 uV
		500 MHz limit		262 uV		56 uV
		350 MHz limit		190 uV		47.7 uV
		250 MHz limit		153 uV		46.1 uV
		200 MHz limit		149 uV		37.9 uV
		20 MHz limit		103 uV		13 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [51]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 3	2 mV/div	5 GHz				164 uV
		4 GHz limit				139 uV
		3 GHz limit				119 uV
		2.5 GHz limit				110 uV
		2 GHz limit				97.6 uV
		1 GHz limit				72.4 uV
		500 MHz limit		285 uV		56.2 uV
		350 MHz limit		195 uV		47.3 uV
		250 MHz limit		155 uV		46.7 uV
		200 MHz limit		153 uV		38 uV
		20 MHz limit		103 uV		13.3 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [51]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 3	5 mV/div	5 GHz				210 uV
		4 GHz limit				175 uV
		3 GHz limit				149 uV
		2.5 GHz limit				133 uV
		2 GHz limit				118 uV
		1 GHz limit				89.6 uV
		500 MHz limit		297 uV		68 uV
		350 MHz limit		205 uV		56.5 uV
		250 MHz limit		161 uV		54 uV
		200 MHz limit		154 uV		44.4 uV
		20 MHz limit		110 uV		15.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [51]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 3	10 mV/div	5 GHz				330 uV
		4 GHz limit				271 uV
		3 GHz limit				226 uV
		2.5 GHz limit				203 uV
		2 GHz limit				186 uV
		1 GHz limit				128 uV
		500 MHz limit		334 uV		91.9 uV
		350 MHz limit		231 uV		77.3 uV
		250 MHz limit		186 uV		74.7 uV
		200 MHz limit		165 uV		65.8 uV
		20 MHz limit		141 uV		22.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [51]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 3	20 mV/div	5 GHz				595 uV
		4 GHz limit				486 uV
		3 GHz limit				398 uV
		2.5 GHz limit				363 uV
		2 GHz limit				320 uV
		1 GHz limit				226 uV
		500 MHz limit		407 uV		162 uV
		350 MHz limit		305 uV		133 uV
		250 MHz limit		257 uV		120 uV
		200 MHz limit		211 uV		106 uV
		20 MHz limit		224 uV		41.2 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [51]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 3	50 mV/div	5 GHz				1.4 mV
		4 GHz limit				1.15 mV
		3 GHz limit				960 uV
		2.5 GHz limit				856 uV
		2 GHz limit				745 uV
		1 GHz limit				534 uV
		500 MHz limit		737 uV		396 uV
		350 MHz limit		553 uV		307 uV
		250 MHz limit		528 uV		280 uV
		200 MHz limit		387 uV		247 uV
		20 MHz limit		510 uV		105 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [51]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B, MSO64B						
Channel 3	100 mV/div	5 GHz				3.38 mV
		4 GHz limit				2.71 mV
		3 GHz limit				2.28 mV
		2.5 GHz limit				2.03 mV
		2 GHz limit				1.81 mV
		1 GHz limit				1.33 mV
		500 MHz limit		1.77 mV		941 uV
		350 MHz limit		1.38 mV		792 uV
		250 MHz limit		1.18 mV		722 uV
		200 MHz limit		952 uV		666 uV
		20 MHz limit		1.13 mV		236 uV
Channel 3	1 V/div	5 GHz				28.1 mV
		4 GHz limit				23.1 mV
		3 GHz limit				19.2 mV
		2.5 GHz limit				17.1 mV
		2 GHz limit				14.9 mV
		1 GHz limit				10.8 mV
		500 MHz limit		19 mV		7.92 mV
		350 MHz limit		14.9 mV		6.14 mV
		250 MHz limit		13.6 mV		5.6 mV
		200 MHz limit		11.3 mV		4.94 mV
		20 MHz limit		11.7 mV		2.11 mV

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [52]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B						
Channel 3	1 mV/div	2.5 GHz limit				109 uV
		2 GHz limit				99.6 uV
		1 GHz limit				73.9 uV
		500 MHz limit				54.8 uV
		350 MHz limit				46.6 uV
		250 MHz limit				43.5 uV
		200 MHz limit				38.8 uV
		20 MHz limit				14.7 uV
Channel 3	2 mV/div	2.5 GHz limit				112 uV
		2 GHz limit				101 uV
		1 GHz limit				74.9 uV
		500 MHz limit				55.5 uV
		350 MHz limit				47.3 uV
		250 MHz limit				44.1 uV
		200 MHz limit				39.3 uV
		20 MHz limit				14.8 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [52]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B						
Channel 3	5 mV/div	2.5 GHz limit				142 uV
		2 GHz limit				128 uV
		1 GHz limit				92.8 uV
		500 MHz limit				68 uV
		350 MHz limit				56.5 uV
		250 MHz limit				52.8 uV
		200 MHz limit				47 uV
		20 MHz limit				17.7 uV
Channel 3	10 mV/div	2.5 GHz limit				221 uV
		2 GHz limit				197 uV
		1 GHz limit				134 uV
		500 MHz limit				97.4 uV
		350 MHz limit				80.1 uV
		250 MHz limit				74.7 uV
		200 MHz limit				66.6 uV
		20 MHz limit				25.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [52]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B						
Channel 3	20 mV/div	2.5 GHz limit				398uV
		2 GHz limit				350 uV
		1 GHz limit				237 uV
		500 MHz limit				174 uV
		350 MHz limit				138 uV
		250 MHz limit				129 uV
		200 MHz limit				115 uV
		20 MHz limit				44.6 uV
Channel 3	50 mV/div	2.5 GHz limit				938 uV
		2 GHz limit				836 uV
		1 GHz limit				559 uV
		500 MHz limit				410 uV
		350 MHz limit				322 uV
		250 MHz limit				300 uV
		200 MHz limit				271 uV
		20 MHz limit				105 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [52]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B						
Channel 3	100 mV/div	2.5 GHz limit				2.23 mV
		2 GHz limit				1.99 mV
		1 GHz limit				1.36 mV
		500 MHz limit				985 uV
		350 MHz limit				801 uV
		250 MHz limit				747 uV
		200 MHz limit				674 uV
		20 MHz limit				256 uV
Channel 3	1 V/div	2.5 GHz limit				19 mV
		2 GHz limit				16.7 mV
		1 GHz limit				11.1 mV
		500 MHz limit				8.1 mV
		350 MHz limit				6.36 mV
		250 MHz limit				5.94 mV
		200 MHz limit				5.35 mV
		20 MHz limit				2.08 mV

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [53]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO66B						
Channel 4	1 mV/div	5 GHz				156 uV
		4 GHz limit				138 uV
		3 GHz limit				118 uV
		2.5 GHz limit				107 uV
		2 GHz limit				97.4 uV
		1 GHz limit				72.2 uV
		500 MHz limit				52.9 uV
		350 MHz limit				45 uV
		250 MHz limit				42 uV
		200 MHz limit				36.2 uV
		20 MHz limit				13 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [53]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO66B						
Channel 4	2 mV/div	5 GHz				158 uV
		4 GHz limit				139 uV
		3 GHz limit				120 uV
		2.5 GHz limit				108 uV
		2 GHz limit				98.7 uV
		1 GHz limit				73.2 uV
		500 MHz limit				53.6 uV
		350 MHz limit				45.7 uV
		250 MHz limit				42.6 uV
		200 MHz limit				36.7 uV
		20 MHz limit				13.2 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [53]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO66B						
Channel 4	5 mV/div	5 GHz				189 uV
		4 GHz limit				165 uV
		3 GHz limit				142 uV
		2.5 GHz limit				128 uV
		2 GHz limit				115 uV
		1 GHz limit				84.6 uV
		500 MHz limit				61.3 uV
		350 MHz limit				52.2 uV
		250 MHz limit				48.7 uV
		200 MHz limit				41.9 uV
		20 MHz limit				15 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [53]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO66B						
Channel 4	10 mV/div	5 GHz				278 uV
		4 GHz limit				242 uV
		3 GHz limit				203 uV
		2.5 GHz limit				181 uV
		2 GHz limit				163 uV
		1 GHz limit				117 uV
		500 MHz limit				84.8 uV
		350 MHz limit				70.5 uV
		250 MHz limit				65.8 uV
		200 MHz limit				56.7 uV
		20 MHz limit				20.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [53]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO66B						
Channel 4	20 mV/div	5 GHz				478 uV
		4 GHz limit				412 uV
		3 GHz limit				346 uV
		2.5 GHz limit				309 uV
		2 GHz limit				275 uV
		1 GHz limit				195 uV
		500 MHz limit				141 uV
		350 MHz limit				116 uV
		250 MHz limit				107 uV
		200 MHz limit				93.2 uV
		20 MHz limit				34.2 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [53]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO66B						
Channel 4	50 mV/div	5 GHz				1.09 mV
		4 GHz limit				949 uV
		3 GHz limit				790 uV
		2.5 GHz limit				704 uV
		2 GHz limit				627 uV
		1 GHz limit				444 uV
		500 MHz limit				325 uV
		350 MHz limit				261 uV
		250 MHz limit				241 uV
		200 MHz limit				210 uV
		20 MHz limit				79 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [53]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO66B						
Channel 4	100 mV/div	5 GHz				2.81 mV
		4 GHz limit				2.45 mV
		3 GHz limit				2.06 mV
		2.5 GHz limit				1.83 mV
		2 GHz limit				1.65 mV
		1 GHz limit				1.17 mV
		500 MHz limit				858 uV
		350 MHz limit				705 uV
		250 MHz limit				658 uV
		200 MHz limit				573 uV
		20 MHz limit				203 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [53]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO66B						
Channel 4	1 V/div	5 GHz				21.8 mV
		4 GHz limit				18.8 mV
		3 GHz limit				15.8 mV
		2.5 GHz limit				13.9 mV
		2 GHz limit				12.4 mV
		1 GHz limit				8.78 mV
		500 MHz limit				6.51 mV
		350 MHz limit				5.11 mV
		250 MHz limit				4.77 mV
		200 MHz limit				4.15 mV
		20 MHz limit				1.56 mV

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [54]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO66B, MSO64B						
Channel 4	1 mV/div	5 GHz				162 uV
		4 GHz limit				138 uV
		3 GHz limit				117 uV
		2.5 GHz limit				108 uV
		2 GHz limit				96.3 uV
		1 GHz limit				77.3 uV
		500 MHz limit		262 uV		56 uV
		350 MHz limit		190 uV		47.7 uV
		250 MHz limit		153 uV		46.1 uV
		200 MHz limit		149 uV		37.9 uV
		20 MHz limit		103 uV		13 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [54]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO66B, MSO64B						
Channel 4	2 mV/div	5 GHz				164 uV
		4 GHz limit				139 uV
		3 GHz limit				119 uV
		2.5 GHz limit				110 uV
		2 GHz limit				97.6 uV
		1 GHz limit				72.4 uV
		500 MHz limit		285 uV		56.2 uV
		350 MHz limit		195 uV		47.3 uV
		250 MHz limit		155 uV		46.7 uV
		200 MHz limit		153 uV		38 uV
		20 MHz limit		103 uV		13.3 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [54]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO66B, MSO64B						
Channel 4	5 mV/div	5 GHz				210 uV
		4 GHz limit				175 uV
		3 GHz limit				149 uV
		2.5 GHz limit				133 uV
		2 GHz limit				118 uV
		1 GHz limit				89.6 uV
		500 MHz limit		297 uV		68 uV
		350 MHz limit		205 uV		56.5 uV
		250 MHz limit		161 uV		54 uV
		200 MHz limit		154 uV		44.4 uV
		20 MHz limit		110 uV		15.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [54]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO66B, MSO64B						
Channel 4	10 mV/div	5 GHz				330 uV
		4 GHz limit				271 uV
		3 GHz limit				226 uV
		2.5 GHz limit				203 uV
		2 GHz limit				186 uV
		1 GHz limit				128 uV
		500 MHz limit		334 uV		91.9 uV
		350 MHz limit		231 uV		77.3 uV
		250 MHz limit		186 uV		74.7 uV
		200 MHz limit		165 uV		65.8 uV
		20 MHz limit		141 uV		22.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [54]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO66B, MSO64B						
Channel 4	20 mV/div	5 GHz				595 uV
		4 GHz limit				486 uV
		3 GHz limit				398 uV
		2.5 GHz limit				363 uV
		2 GHz limit				320 uV
		1 GHz limit				226 uV
		500 MHz limit		407 uV		162 uV
		350 MHz limit		305 uV		133 uV
		250 MHz limit		257 uV		120 uV
		200 MHz limit		211 uV		106 uV
		20 MHz limit		224 uV		41.2 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [54]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO66B, MSO64B						
Channel 4	50 mV/div	5 GHz				1.4 mV
		4 GHz limit				1.15 mV
		3 GHz limit				960 uV
		2.5 GHz limit				856 uV
		2 GHz limit				745 uV
		1 GHz limit				534 uV
		500 MHz limit		737 uV		396 uV
		350 MHz limit		553 uV		307 uV
		250 MHz limit		528 uV		280 uV
		200 MHz limit		387 uV		247 uV
		20 MHz limit		510 uV		105 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [54]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO66B, MSO64B						
Channel 4	100 mV/div	5 GHz				3.38 mV
		4 GHz limit				2.71 mV
		3 GHz limit				2.28 mV
		2.5 GHz limit				2.03 mV
		2 GHz limit				1.81 mV
		1 GHz limit				1.33 mV
		500 MHz limit		1.77 mV		941 uV
		350 MHz limit		1.38 mV		792 uV
		250 MHz limit		1.18 mV		722 uV
		200 MHz limit		952 uV		666 uV
		20 MHz limit		1.13 mV		236 uV
Channel 4	1 V/div	5 GHz				28.1 mV
		4 GHz limit				23.1 mV
		3 GHz limit				19.2 mV
		2.5 GHz limit				17.1 mV
		2 GHz limit				14.9 mV
		1 GHz limit				10.8 mV
		500 MHz limit		19 mV		7.92 mV
		350 MHz limit		14.9 mV		6.14 mV
		250 MHz limit		13.6 mV		5.6 mV
		200 MHz limit		11.3 mV		4.94 mV
		20 MHz limit		11.7 mV		2.11 mV

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [55]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B						
Channel 4	1 mV/div	2.5 GHz limit				109 uV
		2 GHz limit				99.6 uV
		1 GHz limit				73.9 uV
		500 MHz limit				54.8 uV
		350 MHz limit				46.6 uV
		250 MHz limit				43.5 uV
		200 MHz limit				38.8 uV
		20 MHz limit				14.7 uV
Channel 4	2 mV/div	2.5 GHz limit				112 uV
		2 GHz limit				101 uV
		1 GHz limit				74.9 uV
		500 MHz limit				55.5 uV
		350 MHz limit				47.3 uV
		250 MHz limit				44.1 uV
		200 MHz limit				39.3 uV
		20 MHz limit				14.8 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [55]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B						
Channel 4	5 mV/div	2.5 GHz limit				142 uV
		2 GHz limit				128 uV
		1 GHz limit				92.8 uV
		500 MHz limit				68 uV
		350 MHz limit				56.5 uV
		250 MHz limit				52.8 uV
		200 MHz limit				47 uV
		20 MHz limit				17.7 uV
Channel 4	10 mV/div	2.5 GHz limit				221 uV
		2 GHz limit				197 uV
		1 GHz limit				134 uV
		500 MHz limit				97.4 uV
		350 MHz limit				80.1 uV
		250 MHz limit				74.7 uV
		200 MHz limit				66.6 uV
		20 MHz limit				25.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [55]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B						
Channel 4	20 mV/div	2.5 GHz limit				398uV
		2 GHz limit				350 uV
		1 GHz limit				237 uV
		500 MHz limit				174 uV
		350 MHz limit				138 uV
		250 MHz limit				129 uV
		200 MHz limit				115 uV
		20 MHz limit				44.6 uV
Channel 4	50 mV/div	2.5 GHz limit				938 uV
		2 GHz limit				836 uV
		1 GHz limit				559 uV
		500 MHz limit				410 uV
		350 MHz limit				322 uV
		250 MHz limit				300 uV
		200 MHz limit				271 uV
		20 MHz limit				105 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [55]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B, MSO64B						
Channel 4	100 mV/div	2.5 GHz limit				2.23 mV
		2 GHz limit				1.99 mV
		1 GHz limit				1.36 mV
		500 MHz limit				985 uV
		350 MHz limit				801 uV
		250 MHz limit				747 uV
		200 MHz limit				674 uV
		20 MHz limit				256 uV
Channel 4	1 V/div	2.5 GHz limit				19 mV
		2 GHz limit				16.7 mV
		1 GHz limit				11.1 mV
		500 MHz limit				8.1 mV
		350 MHz limit				6.36 mV
		250 MHz limit				5.94 mV
		200 MHz limit				5.35 mV
		20 MHz limit				2.08 mV

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [56]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B						
Channel 5	1 mV/div	5 GHz				156 uV
		4 GHz limit				138 uV
		3 GHz limit				118 uV
		2.5 GHz limit				107 uV
		2 GHz limit				97.4 uV
		1 GHz limit				72.2 uV
		500 MHz limit				52.9 uV
		350 MHz limit				45 uV
		250 MHz limit				42 uV
		200 MHz limit				36.2 uV
		20 MHz limit				13 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [56]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B						
Channel 5	2 mV/div	5 GHz				158 uV
		4 GHz limit				139 uV
		3 GHz limit				120 uV
		2.5 GHz limit				108 uV
		2 GHz limit				98.7 uV
		1 GHz limit				73.2 uV
		500 MHz limit				53.6 uV
		350 MHz limit				45.7 uV
		250 MHz limit				42.6 uV
		200 MHz limit				36.7 uV
		20 MHz limit				13.2 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [56]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B						
Channel 5	5 mV/div	5 GHz				189 uV
		4 GHz limit				165 uV
		3 GHz limit				142 uV
		2.5 GHz limit				128 uV
		2 GHz limit				115 uV
		1 GHz limit				84.6 uV
		500 MHz limit				61.3 uV
		350 MHz limit				52.2 uV
		250 MHz limit				48.7 uV
		200 MHz limit				41.9 uV
		20 MHz limit				15 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [56]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B						
Channel 5	10 mV/div	5 GHz				278 uV
		4 GHz limit				242 uV
		3 GHz limit				203 uV
		2.5 GHz limit				181 uV
		2 GHz limit				163 uV
		1 GHz limit				117 uV
		500 MHz limit				84.8 uV
		350 MHz limit				70.5 uV
		250 MHz limit				65.8 uV
		200 MHz limit				56.7 uV
		20 MHz limit				20.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [56]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B						
Channel 5	20 mV/div	5 GHz				478 uV
		4 GHz limit				412 uV
		3 GHz limit				346 uV
		2.5 GHz limit				309 uV
		2 GHz limit				275 uV
		1 GHz limit				195 uV
		500 MHz limit				141 uV
		350 MHz limit				116 uV
		250 MHz limit				107 uV
		200 MHz limit				93.2 uV
		20 MHz limit				34.2 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [56]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B						
Channel 5	50 mV/div	5 GHz				1.09 mV
		4 GHz limit				949 uV
		3 GHz limit				790 uV
		2.5 GHz limit				704 uV
		2 GHz limit				627 uV
		1 GHz limit				444 uV
		500 MHz limit				325 uV
		350 MHz limit				261 uV
		250 MHz limit				241 uV
		200 MHz limit				210 uV
		20 MHz limit				79 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [56]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B						
Channel 5	100 mV/div	5 GHz				2.81 mV
		4 GHz limit				2.45 mV
		3 GHz limit				2.06 mV
		2.5 GHz limit				1.83 mV
		2 GHz limit				1.65 mV
		1 GHz limit				1.17 mV
		500 MHz limit				858 uV
		350 MHz limit				705 uV
		250 MHz limit				658 uV
		200 MHz limit				573 uV
		20 MHz limit				203 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 25 GS/s	
	V/div	Bandwidth [56]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B						
Channel 5	1 V/div	5 GHz				21.8 mV
		4 GHz limit				18.8 mV
		3 GHz limit				15.8 mV
		2.5 GHz limit				13.9 mV
		2 GHz limit				12.4 mV
		1 GHz limit				8.78 mV
		500 MHz limit				6.51 mV
		350 MHz limit				5.11 mV
		250 MHz limit				4.77 mV
		200 MHz limit				4.15 mV
		20 MHz limit				1.56 mV

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [57]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B						
Channel 5	1 mV/div	5 GHz				162 uV
		4 GHz limit				138 uV
		3 GHz limit				117 uV
		2.5 GHz limit				108 uV
		2 GHz limit				96.3 uV
		1 GHz limit				77.3 uV
		500 MHz limit		262 uV		56 uV
		350 MHz limit		190 uV		47.7 uV
		250 MHz limit		153 uV		46.1 uV
		200 MHz limit		149 uV		37.9 uV
		20 MHz limit		103 uV		13 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [57]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B						
Channel 5	2 mV/div	5 GHz				164 uV
		4 GHz limit				139 uV
		3 GHz limit				119 uV
		2.5 GHz limit				110 uV
		2 GHz limit				97.6 uV
		1 GHz limit				72.4 uV
		500 MHz limit		285 uV		56.2 uV
		350 MHz limit		195 uV		47.3 uV
		250 MHz limit		155 uV		46.7 uV
		200 MHz limit		153 uV		38 uV
		20 MHz limit		103 uV		13.3 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [57]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B						
Channel 5	5 mV/div	5 GHz				210 uV
		4 GHz limit				175 uV
		3 GHz limit				149 uV
		2.5 GHz limit				133 uV
		2 GHz limit				118 uV
		1 GHz limit				89.6 uV
		500 MHz limit		297 uV		68 uV
		350 MHz limit		205 uV		56.5 uV
		250 MHz limit		161 uV		54 uV
		200 MHz limit		154 uV		44.4 uV
		20 MHz limit		110 uV		15.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [57]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B						
Channel 5	10 mV/div	5 GHz				330 uV
		4 GHz limit				271 uV
		3 GHz limit				226 uV
		2.5 GHz limit				203 uV
		2 GHz limit				186 uV
		1 GHz limit				128 uV
		500 MHz limit		334 uV		91.9 uV
		350 MHz limit		231 uV		77.3 uV
		250 MHz limit		186 uV		74.7 uV
		200 MHz limit		165 uV		65.8 uV
		20 MHz limit		141 uV		22.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [57]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B						
Channel 5	20 mV/div	5 GHz				595 uV
		4 GHz limit				486 uV
		3 GHz limit				398 uV
		2.5 GHz limit				363 uV
		2 GHz limit				320 uV
		1 GHz limit				226 uV
		500 MHz limit		407 uV		162 uV
		350 MHz limit		305 uV		133 uV
		250 MHz limit		257 uV		120 uV
		200 MHz limit		211 uV		106 uV
		20 MHz limit		224 uV		41.2 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [57]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B						
Channel 5	50 mV/div	5 GHz				1.4 mV
		4 GHz limit				1.15 mV
		3 GHz limit				960 uV
		2.5 GHz limit				856 uV
		2 GHz limit				745 uV
		1 GHz limit				534 uV
		500 MHz limit		737 uV		396 uV
		350 MHz limit		553 uV		307 uV
		250 MHz limit		528 uV		280 uV
		200 MHz limit		387 uV		247 uV
		20 MHz limit		510 uV		105 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [57]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B, MSO66B						
Channel 5	100 mV/div	5 GHz				3.38 mV
		4 GHz limit				2.71 mV
		3 GHz limit				2.28 mV
		2.5 GHz limit				2.03 mV
		2 GHz limit				1.81 mV
		1 GHz limit				1.33 mV
		500 MHz limit		1.77 mV		941 uV
		350 MHz limit		1.38 mV		792 uV
		250 MHz limit		1.18 mV		722 uV
		200 MHz limit		952 uV		666 uV
		20 MHz limit		1.13 mV		236 uV
Channel 5	1 V/div	5 GHz				28.1 mV
		4 GHz limit				23.1 mV
		3 GHz limit				19.2 mV
		2.5 GHz limit				17.1 mV
		2 GHz limit				14.9 mV
		1 GHz limit				10.8 mV
		500 MHz limit		19 mV		7.92 mV
		350 MHz limit		14.9 mV		6.14 mV
		250 MHz limit		13.6 mV		5.6 mV
		200 MHz limit		11.3 mV		4.94 mV
		20 MHz limit		11.7 mV		2.11 mV

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [58]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B						
Channel 5	1 mV/div	2.5 GHz limit				109 uV
		2 GHz limit				99.6 uV
		1 GHz limit				73.9 uV
		500 MHz limit				54.8 uV
		350 MHz limit				46.6 uV
		250 MHz limit				43.5 uV
		200 MHz limit				38.8 uV
		20 MHz limit				14.7 uV
Channel 5	2 mV/div	2.5 GHz limit				112 uV
		2 GHz limit				101 uV
		1 GHz limit				74.9 uV
		500 MHz limit				55.5 uV
		350 MHz limit				47.3 uV
		250 MHz limit				44.1 uV
		200 MHz limit				39.3 uV
		20 MHz limit				14.8 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [58]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B						
Channel 5	5 mV/div	2.5 GHz limit				142 uV
		2 GHz limit				128 uV
		1 GHz limit				92.8 uV
		500 MHz limit				68 uV
		350 MHz limit				56.5 uV
		250 MHz limit				52.8 uV
		200 MHz limit				47 uV
		20 MHz limit				17.7 uV
Channel 5	10 mV/div	2.5 GHz limit				221 uV
		2 GHz limit				197 uV
		1 GHz limit				134 uV
		500 MHz limit				97.4 uV
		350 MHz limit				80.1 uV
		250 MHz limit				74.7 uV
		200 MHz limit				66.6 uV
		20 MHz limit				25.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [58]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B						
Channel 5	20 mV/div	2.5 GHz limit				398uV
		2 GHz limit				350 uV
		1 GHz limit				237 uV
		500 MHz limit				174 uV
		350 MHz limit				138 uV
		250 MHz limit				129 uV
		200 MHz limit				115 uV
		20 MHz limit				44.6 uV
Channel 5	50 mV/div	2.5 GHz limit				938 uV
		2 GHz limit				836 uV
		1 GHz limit				559 uV
		500 MHz limit				410 uV
		350 MHz limit				322 uV
		250 MHz limit				300 uV
		200 MHz limit				271 uV
		20 MHz limit				105 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [58]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B						
Channel 5	100 mV/div	2.5 GHz limit				2.23 mV
		2 GHz limit				1.99 mV
		1 GHz limit				1.36 mV
		500 MHz limit				985 uV
		350 MHz limit				801 uV
		250 MHz limit				747 uV
		200 MHz limit				674 uV
		20 MHz limit				256 uV
Channel 5	1 V/div	2.5 GHz limit				19 mV
		2 GHz limit				16.7 mV
		1 GHz limit				11.1 mV
		500 MHz limit				8.1 mV
		350 MHz limit				6.36 mV
		250 MHz limit				5.94 mV
		200 MHz limit				5.35 mV
		20 MHz limit				2.08 mV

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [60]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B						
Channel 6	1 mV/div	5 GHz				162 uV
		4 GHz limit				138 uV
		3 GHz limit				117 uV
		2.5 GHz limit				108 uV
		2 GHz limit				96.3 uV
		1 GHz limit				77.3 uV
		500 MHz limit		262 uV		56 uV
		350 MHz limit		190 uV		47.7 uV
		250 MHz limit		153 uV		46.1 uV
		200 MHz limit		149 uV		37.9 uV
		20 MHz limit		103 uV		13 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [60]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B						
Channel 6	2 mV/div	5 GHz				164 uV
		4 GHz limit				139 uV
		3 GHz limit				119 uV
		2.5 GHz limit				110 uV
		2 GHz limit				97.6 uV
		1 GHz limit				72.4 uV
		500 MHz limit		285 uV		56.2 uV
		350 MHz limit		195 uV		47.3 uV
		250 MHz limit		155 uV		46.7 uV
		200 MHz limit		153 uV		38 uV
		20 MHz limit		103 uV		13.3 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [60]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B						
Channel 6	5 mV/div	5 GHz				210 uV
		4 GHz limit				175 uV
		3 GHz limit				149 uV
		2.5 GHz limit				133 uV
		2 GHz limit				118 uV
		1 GHz limit				89.6 uV
		500 MHz limit		297 uV		68 uV
		350 MHz limit		205 uV		56.5 uV
		250 MHz limit		161 uV		54 uV
		200 MHz limit		154 uV		44.4 uV
		20 MHz limit		110 uV		15.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [60]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B						
Channel 6	10 mV/div	5 GHz				330 uV
		4 GHz limit				271 uV
		3 GHz limit				226 uV
		2.5 GHz limit				203 uV
		2 GHz limit				186 uV
		1 GHz limit				128 uV
		500 MHz limit		334 uV		91.9 uV
		350 MHz limit		231 uV		77.3 uV
		250 MHz limit		186 uV		74.7 uV
		200 MHz limit		165 uV		65.8 uV
		20 MHz limit		141 uV		22.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [60]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B						
Channel 6	20 mV/div	5 GHz				595 uV
		4 GHz limit				486 uV
		3 GHz limit				398 uV
		2.5 GHz limit				363 uV
		2 GHz limit				320 uV
		1 GHz limit				226 uV
		500 MHz limit		407 uV		162 uV
		350 MHz limit		305 uV		133 uV
		250 MHz limit		257 uV		120 uV
		200 MHz limit		211 uV		106 uV
		20 MHz limit		224 uV		41.2 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [60]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B						
Channel 6	50 mV/div	5 GHz				1.4 mV
		4 GHz limit				1.15 mV
		3 GHz limit				960 uV
		2.5 GHz limit				856 uV
		2 GHz limit				745 uV
		1 GHz limit				534 uV
		500 MHz limit		737 uV		396 uV
		350 MHz limit		553 uV		307 uV
		250 MHz limit		528 uV		280 uV
		200 MHz limit		387 uV		247 uV
		20 MHz limit		510 uV		105 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 12.5 GS/s	
	V/div	Bandwidth [60]	Test result (mV)	High limit (mV)	Test result (mV)	High limit (mV)
Models: MSO68B						
Channel 6	100 mV/div	5 GHz				3.38 mV
		4 GHz limit				2.71 mV
		3 GHz limit				2.28 mV
		2.5 GHz limit				2.03 mV
		2 GHz limit				1.81 mV
		1 GHz limit				1.33 mV
		500 MHz limit		1.77 mV		941 uV
		350 MHz limit		1.38 mV		792 uV
		250 MHz limit		1.18 mV		722 uV
		200 MHz limit		952 uV		666 uV
		20 MHz limit		1.13 mV		236 uV
Channel 6	1 V/div	5 GHz				28.1 mV
		4 GHz limit				23.1 mV
		3 GHz limit				19.2 mV
		2.5 GHz limit				17.1 mV
		2 GHz limit				14.9 mV
		1 GHz limit				10.8 mV
		500 MHz limit		19 mV		7.92 mV
		350 MHz limit		14.9 mV		6.14 mV
		250 MHz limit		13.6 mV		5.6 mV
		200 MHz limit		11.3 mV		4.94 mV
		20 MHz limit		11.7 mV		2.11 mV

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [61]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B						
Channel 6	1 mV/div	2.5 GHz limit				109 uV
		2 GHz limit				99.6 uV
		1 GHz limit				73.9 uV
		500 MHz limit				54.8 uV
		350 MHz limit				46.6 uV
		250 MHz limit				43.5 uV
		200 MHz limit				38.8 uV
		20 MHz limit				14.7 uV
Channel 6	2 mV/div	2.5 GHz limit				112 uV
		2 GHz limit				101 uV
		1 GHz limit				74.9 uV
		500 MHz limit				55.5 uV
		350 MHz limit				47.3 uV
		250 MHz limit				44.1 uV
		200 MHz limit				39.3 uV
		20 MHz limit				14.8 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [61]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B						
Channel 6	5 mV/div	2.5 GHz limit				142 uV
		2 GHz limit				128 uV
		1 GHz limit				92.8 uV
		500 MHz limit				68 uV
		350 MHz limit				56.5 uV
		250 MHz limit				52.8 uV
		200 MHz limit				47 uV
		20 MHz limit				17.7 uV
Channel 6	10 mV/div	2.5 GHz limit				221 uV
		2 GHz limit				197 uV
		1 GHz limit				134 uV
		500 MHz limit				97.4 uV
		350 MHz limit				80.1 uV
		250 MHz limit				74.7 uV
		200 MHz limit				66.6 uV
		20 MHz limit				25.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [61]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B						
Channel 6	20 mV/div	2.5 GHz limit				398uV
		2 GHz limit				350 uV
		1 GHz limit				237 uV
		500 MHz limit				174 uV
		350 MHz limit				138 uV
		250 MHz limit				129 uV
		200 MHz limit				115 uV
		20 MHz limit				44.6 uV
Channel 6	50 mV/div	2.5 GHz limit				938 uV
		2 GHz limit				836 uV
		1 GHz limit				559 uV
		500 MHz limit				410 uV
		350 MHz limit				322 uV
		250 MHz limit				300 uV
		200 MHz limit				271 uV
		20 MHz limit				105 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [61]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B, MSO66B						
Channel 6	100 mV/div	2.5 GHz limit				2.23 mV
		2 GHz limit				1.99 mV
		1 GHz limit				1.36 mV
		500 MHz limit				985 uV
		350 MHz limit				801 uV
		250 MHz limit				747 uV
		200 MHz limit				674 uV
		20 MHz limit				256 uV
Channel 6	1 V/div	2.5 GHz limit				19 mV
		2 GHz limit				16.7 mV
		1 GHz limit				11.1 mV
		500 MHz limit				8.1 mV
		350 MHz limit				6.36 mV
		250 MHz limit				5.94 mV
		200 MHz limit				5.35 mV
		20 MHz limit				2.08 mV

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [62]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B						
Channel 7	1 mV/div	2.5 GHz limit				109 uV
		2 GHz limit				99.6 uV
		1 GHz limit				73.9 uV
		500 MHz limit				54.8 uV
		350 MHz limit				46.6 uV
		250 MHz limit				43.5 uV
		200 MHz limit				38.8 uV
		20 MHz limit				14.7 uV
Channel 7	2 mV/div	2.5 GHz limit				112 uV
		2 GHz limit				101 uV
		1 GHz limit				74.9 uV
		500 MHz limit				55.5 uV
		350 MHz limit				47.3 uV
		250 MHz limit				44.1 uV
		200 MHz limit				39.3 uV
		20 MHz limit				14.8 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [62]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B						
Channel 7	5 mV/div	2.5 GHz limit				142 uV
		2 GHz limit				128 uV
		1 GHz limit				92.8 uV
		500 MHz limit				68 uV
		350 MHz limit				56.5 uV
		250 MHz limit				52.8 uV
		200 MHz limit				47 uV
		20 MHz limit				17.7 uV
Channel 7	10 mV/div	2.5 GHz limit				221 uV
		2 GHz limit				197 uV
		1 GHz limit				134 uV
		500 MHz limit				97.4 uV
		350 MHz limit				80.1 uV
		250 MHz limit				74.7 uV
		200 MHz limit				66.6 uV
		20 MHz limit				25.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [62]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B						
Channel 7	20 mV/div	2.5 GHz limit				398uV
		2 GHz limit				350 uV
		1 GHz limit				237 uV
		500 MHz limit				174 uV
		350 MHz limit				138 uV
		250 MHz limit				129 uV
		200 MHz limit				115 uV
		20 MHz limit				44.6 uV
Channel 7	50 mV/div	2.5 GHz limit				938 uV
		2 GHz limit				836 uV
		1 GHz limit				559 uV
		500 MHz limit				410 uV
		350 MHz limit				322 uV
		250 MHz limit				300 uV
		200 MHz limit				271 uV
		20 MHz limit				105 uV

Table continued…

62 Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [62]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B						
Channel 7	100 mV/div	2.5 GHz limit				2.23 mV
		2 GHz limit				1.99 mV
		1 GHz limit				1.36 mV
		500 MHz limit				985 uV
		350 MHz limit				801 uV
		250 MHz limit				747 uV
		200 MHz limit				674 uV
		20 MHz limit				256 uV
Channel 7	1 V/div	2.5 GHz limit				19 mV
		2 GHz limit				16.7 mV
		1 GHz limit				11.1 mV
		500 MHz limit				8.1 mV
		350 MHz limit				6.36 mV
		250 MHz limit				5.94 mV
		200 MHz limit				5.35 mV
		20 MHz limit				2.08 mV

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [63]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B						
Channel 8	1 mV/div	2.5 GHz limit				109 uV
		2 GHz limit				99.6 uV
		1 GHz limit				73.9 uV
		500 MHz limit				54.8 uV
		350 MHz limit				46.6 uV
		250 MHz limit				43.5 uV
		200 MHz limit				38.8 uV
		20 MHz limit				14.7 uV
Channel 8	2 mV/div	2.5 GHz limit				112 uV
		2 GHz limit				101 uV
		1 GHz limit				74.9 uV
		500 MHz limit				55.5 uV
		350 MHz limit				47.3 uV
		250 MHz limit				44.1 uV
		200 MHz limit				39.3 uV
		20 MHz limit				14.8 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [63]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B						
Channel 8	5 mV/div	2.5 GHz limit				142 uV
		2 GHz limit				128 uV
		1 GHz limit				92.8 uV
		500 MHz limit				68 uV
		350 MHz limit				56.5 uV
		250 MHz limit				52.8 uV
		200 MHz limit				47 uV
		20 MHz limit				17.7 uV
Channel 8	10 mV/div	2.5 GHz limit				221 uV
		2 GHz limit				197 uV
		1 GHz limit				134 uV
		500 MHz limit				97.4 uV
		350 MHz limit				80.1 uV
		250 MHz limit				74.7 uV
		200 MHz limit				66.6 uV
		20 MHz limit				25.6 uV

Table continued…

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

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [63]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B						
Channel 8	20 mV/div	2.5 GHz limit				398uV
		2 GHz limit				350 uV
		1 GHz limit				237 uV
		500 MHz limit				174 uV
		350 MHz limit				138 uV
		250 MHz limit				129 uV
		200 MHz limit				115 uV
		20 MHz limit				44.6 uV
Channel 8	50 mV/div	2.5 GHz limit				938 uV
		2 GHz limit				836 uV
		1 GHz limit				559 uV
		500 MHz limit				410 uV
		350 MHz limit				322 uV
		250 MHz limit				300 uV
		200 MHz limit				271 uV
		20 MHz limit				105 uV

Table continued…

63 Full = the highest bandwidth setting you can select.

Random Noise, High Res mode: MSO68B, MSO66B, MSO64B						
Performance checks			1 MΩ		50 Ω, 6.25 GS/s	
	V/div	Bandwidth [63]	Test result (mV)	High limit (mV)	Test result (mV)	High limit
Models: MSO68B						
Channel 8	100 mV/div	2.5 GHz limit				2.23 mV
		2 GHz limit				1.99 mV
		1 GHz limit				1.36 mV
		500 MHz limit				985 uV
		350 MHz limit				801 uV
		250 MHz limit				747 uV
		200 MHz limit				674 uV
		20 MHz limit				256 uV
Channel 8	1 V/div	2.5 GHz limit				19 mV
		2 GHz limit				16.7 mV
		1 GHz limit				11.1 mV
		500 MHz limit				8.1 mV
		350 MHz limit				6.36 mV
		250 MHz limit				5.94 mV
		200 MHz limit				5.35 mV
		20 MHz limit				2.08 mV

[63] 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	9.999997 MHz		10.000003 MHz

Digital Threshold Accuracy, typical						
Performance checks:						
Digital channel	Threshold	V_{s-}	V_{s+}	Low limit	Test result	High limit
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
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

Table continued…

Digital Threshold Accuracy, typical						
Performance checks:						
Digital channel	Threshold	V_{s-}	V_{s+}	Low limit	Test result	High limit
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

MSO66 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

Table continued…

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 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

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

Table continued…

DVM voltage accuracy (DC)					
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
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

DVM voltage accuracy (DC)					
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

DVM voltage accuracy (AC)				
All models				
Channel 1				
Vertical Scale	Input Signal	Low limit	Test result	High limit
5 mV	20 mV_{pp} at 1 kHz	9.700 mV		10.300 mV
10 mV	50 mV_{pp} at 1 kHz	24.25 mV		25.750 mV
100 mV	0.5 V_{pp} at 1 kHz	242.500 mV		257.500 mV
200 mV	1 V_{pp} at 1 kHz	485.000 mV		515.000 mV
1 V	5 V_{pp} at 1 kHz	2.425 V		2.575 V
Channel 2				
Vertical Scale	Input Signal	Low limit	Test result	High limit
5 mV	20 mV_{pp} at 1 kHz	9.700 mV		10.300 mV
10 mV	50 mV_{pp} at 1 kHz	24.25 mV		25.750 mV
100 mV	0.5 V_{pp} at 1 kHz	242.500 mV		257.500 mV

Table continued…

DVM voltage accuracy (AC)				
200 mV	1 V_{pp} at 1 kHz	485.000 mV		515.000 mV
1 V	5 V_{pp} at 1 kHz	2.425 V		2.575 V
Channel 3				
Vertical Scale	Input Signal	Low limit	Test result	High limit
5 mV	20 mV_{pp} at 1 kHz	9.700 mV		10.300 mV
10 mV	50 mV_{pp} at 1 kHz	24.25 mV		25.750 mV
100 mV	0.5 V_{pp} at 1 kHz	242.500 mV		257.500 mV
200 mV	1 V_{pp} at 1 kHz	485.000 mV		515.000 mV
1 V	5 V_{pp} at 1 kHz	2.425 V		2.575 V
Channel 4				
Vertical Scale	Input Signal	Low limit	Test result	High limit
5 mV	20 mV_{pp} at 1 kHz	9.700 mV		10.300 mV
10 mV	50 mV_{pp} at 1 kHz	24.25 mV		25.750 mV
100 mV	0.5 V_{pp} at 1 kHz	242.500 mV		257.500 mV
200 mV	1 V_{pp} at 1 kHz	485.000 mV		515.000 mV
1 V	5 V_{pp} at 1 kHz	2.425 V		2.575 V

DVM voltage accuracy (AC)				
MSO66 models				
Channel 5				
Vertical Scale	Input Signal	Low limit	Test result	High limit
5 mV	20 mV_{pp} at 1 kHz	9.700 mV		10.300 mV
10 mV	50 mV_{pp} at 1 kHz	24.25 mV		25.750 mV
100 mV	0.5 V_{pp} at 1 kHz	242.500 mV		257.500 mV
200 mV	1 V_{pp} at 1 kHz	485.000 mV		515.000 mV
1 V	5 V_{pp} at 1 kHz	2.425 V		2.575 V
Channel 6				
Vertical Scale	Input Signal	Low limit	Test result	High limit
5 mV	20 mV_{pp} at 1 kHz	9.700 mV		10.300 mV
10 mV	50 mV_{pp} at 1 kHz	24.25 mV		25.750 mV
100 mV	0.5 V_{pp} at 1 kHz	242.500 mV		257.500 mV
200 mV	1 V_{pp} at 1 kHz	485.000 mV		515.000 mV
1 V	5 V_{pp} at 1 kHz	2.425 V		2.575 V

Trigger frequency accuracy and trigger frequency counter maximum input frequency				
All models				
Channel 1				
	Hz	Low limit	Test result	High limit
	100 Hz	99.999999 Hz		100.00000 Hz
	1 kHz	999.99999 Hz		1.0000000 KHz
	10 kHz	9.9999999 KHz		10.000000 kHz
	100 kHz	99.999999 kHz		100.00000 kHz
	1 MHz	999.99999 kHz		1.0000000 MHz
	10 MHz	9.999997 MHz		10.000003 MHz
	100 MHz	99.999999 MHz		100.00000 MHz
	1 GHz	999.99999 MHz		1.0000000 GHz
	2 GHz	1.9999999 GHz		2.0000000 GHz
	4 GHz	3.999999959 GHz		4.000000041 GHz
	6 GHz	5.999999938 GHz		6.000000062 GHz
	8 GHz	7.999999918 GHz		8.000000082 GHz
Channel 2				
	Hz	Low limit	Test result	High limit
	100 Hz	99.999999 Hz		100.00000 Hz
	1 kHz	999.99999 Hz		1.0000000 KHz
	10 kHz	9.9999999 KHz		10.000000 kHz
	100 kHz	99.999999 kHz		100.00000 kHz
	1 MHz	999.99999 kHz		1.0000000 MHz
	10 MHz	9.999997 MHz		10.000003 MHz
	100 MHz	99.999999 MHz		100.00000 MHz
	1 GHz	999.99999 MHz		1.0000000 GHz
	2 GHz	1.9999999 GHz		2.0000000 GHz
	4 GHz	3.999999959 GHz		4.000000041 GHz
	6 GHz	5.999999938 GHz		6.000000062 GHz
	8 GHz	7.999999918 GHz		8.000000082 GHz
Channel 3				

Table continued…

Trigger frequency accuracy and trigger frequency counter maximum input frequency				
	Hz	Low limit	Test result	High limit
	100 Hz	99.999999 Hz		100.00000 Hz
	1 kHz	999.99999 Hz		1.0000000 KHz
	10 kHz	9.9999999 KHz		10.000000 kHz
	100 kHz	99.999999 kHz		100.00000 kHz
	1 MHz	999.99999 kHz		1.0000000 MHz
	10 MHz	9.999997 MHz		10.000003 MHz
	100 MHz	99.999999 MHz		100.00000 MHz
	1 GHz	999.99999 MHz		1.0000000 GHz
	2 GHz	1.9999999 GHz		2.0000000 GHz
	4 GHz	3.999999959 GHz		4.000000041 GHz
	6 GHz	5.999999938 GHz		6.000000062 GHz
	8 GHz	7.999999918 GHz		8.000000082 GHz
Channel 4				
	Hz	Low limit	Test result	High limit
	100 Hz	99.999999 Hz		100.00000 Hz
	1 kHz	999.99999 Hz		1.0000000 KHz
	10 kHz	9.9999999 KHz		10.000000 kHz
	100 kHz	99.999999 kHz		100.00000 kHz
	1 MHz	999.99999 kHz		1.0000000 MHz
	10 MHz	9.999997 MHz		10.000003 MHz
	100 MHz	99.999999 MHz		100.00000 MHz
	1 GHz	999.99999 MHz		1.0000000 GHz
	2 GHz	1.9999999 GHz		2.0000000 GHz
	4 GHz	3.999999959 GHz		4.000000041 GHz
	6 GHz	5.999999938 GHz		6.000000062 GHz
	8 GHz	7.999999918 GHz		8.000000082 GHz

Trigger frequency accuracy and trigger frequency counter maximum input frequency
MSO66 models
Channel 5

Table continued…

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 6				
	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, 1 MHz	0.999950 MHz		1.000050 MHz
Ramp, 500 KHz	499.975 kHz		500.025 kHz

AFG square and pulse frequency accuracy			
Performance checks			
Waveform type	**Minimum**	**Test result**	**Maximum**
Square, 1 MHz	0.999950 MHz		1.000050 MHz
Pulse, 1 MHz	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 241.)
- 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. 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. The internal diagnostics perform an exhaustive verification of proper instrument function. This verification may take several minutes. When the verification is finished, the status of each self test is shown in the menu.
   e. Verify that the status of all tests is .
   f. Tap anywhere outside the menu to exit the menu.
2. *Run the signal-path compensation routine (may take 5 to 15 minutes per channel):*
   a. Tap **Utility > Calibration**. This displays the **Calibration** configuration menu.
   b. Tap the **Run SPC** button to start the routine.
   c. 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** menu.

The self test procedures are completed. If any of the above tests failed, run the tests again. If there are still failures, contact Tektronix Customer Support.

Note: You cannot run the remaining performance tests until the self tests pass and the SPC has successfully run.

Check input impedance

This test checks the input impedance on all channels.

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: 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. The generator is capable of providing dangerous voltages.

   Note: Impedance measuring equipment that produces 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.
2. Set the calibrator to measure 1 MΩ impedance.
3. Tap **File** > **Default Setup**.
4. *Test 1 MΩ input impedance as follows:*
   a. Tap the channel **1** button on the Settings bar.
   b. Double tap the **Ch 1** badge to open its menu.
   c. Set **Termination** to **1 MΩ**.
   d. Set the **Vertical Scale** to the value to test in the test record (first value is **10 mV/div**).
5. Use the calibrator to measure the input impedance of the oscilloscope and enter the value in the test record.
6. Repeat steps *4.d* on page 242 and *5* on page 242 for all vertical scale settings in the test record for the channel.
7. *Test 50 Ω input impedance as follows:*
   a. Set the calibrator impedance to measure 50 Ω impedance.
   b. Double-tap the **Ch 1** badge and set **Termination** to **50 Ω**.
   c. Repeat steps *4.d* on page 242 through *6* on page 242 for all vertical scale settings in the test record for the channel.
8. *Repeat the procedures for all remaining channels as follows:*
   a. Turn the calibrator output Off.
   b. Move the calibrator connection to the next channel to test.
   c. Double-tap the channel badge of the channel that you have finished testing and set **Display** to **Off**.
   d. Tap the channel button on the Settings bar of the next channel to test.
   e. Starting from step *2* on page 242, repeat the procedures until all channels have been tested.

Check DC gain accuracy

This test checks the DC gain accuracy.

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

   Warning: Set the generator output to Off or 0 volts before connecting, disconnecting, and/or moving the test hookup during the performance of this procedure. The generator is capable of providing dangerous voltages.
2. Tap **File** > **Default Setup**.
3. Double-tap the **Acquisition** badge and set **Acquisition Mode** to **Average**.
4. Set the **Number of Waveforms** to **16**.
5. Tap outside the menu to close the menu.
6. Double-tap the **Trigger** badge and set the trigger **Source** to **AC line**.
7. Tap outside the menu to close it.
8. Add the **Mean** measurement to the Results bar:
   a. Tap the **Add New... Measure** button to open the **Add Measurements** menu.
   b. Set the **Source** to **Ch 1**.
   c. In the **Amplitude Measurements** panel, double-tap the **Mean** button to add the Mean measurement badge to the Results bar.
9. Tap outside the menu to close it.
10. Double-tap the **Mean** results badge.
11. Tap **Show Statistics in Badge**.
12. Tap **FILTER/LIMIT RESULTS** to open the panel.
13. Tap **Limit Measurement Population** to toggle it to **On.**
14. Tap outside the menu to close it.
15. Tap the channel button of the channel to test, to add the channel badge to the Settings bar.
16. Double tap the channel to test badge to open its menu and set the channel settings:
    a. Set **Vertical Scale** to **1 mV/div**.
    b. Set **Termination** to **50 Ω**.
    c. Tap **Bandwidth Limit** and set to **20 MHz**.
    d. Tap outside the menu to close it.
17. Record the negative-measured and positive-measured mean readings in the *Gain expected worksheet* as follows:
    a. On the calibrator, set the DC Voltage Source to the $V_{negative}$ value as listed in the 1 mV row of the worksheet.
    b. Double-tap the **Acquisition** badge and tap **Clear** to reset the measurement statistics.
    c. Enter the **Mean** reading in the worksheet as $V_{negative\text{-}measured}$.
    d. On the calibrator, set the DC Voltage Source to $V_{positive}$ value as listed in the 1 mV row of the worksheet.
    e. Double-tap the **Acquisition** badge (if not open) and tap **Clear**.
    f. Enter the **Mean** reading in the worksheet as $V_{positive\text{-}measured}$.

Table 1: Gain expected worksheet

Oscilloscope Vertical Scale Setting	$V_{diffExpected}$	$V_{negative}$	$V_{positive}$	$V_{negative\text{-}measured}$	$V_{positive\text{-}measured}$	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				

18. Calculate Gain Accuracy as follows:
    a. Calculate V_{diff} as follows:

       $V_{diff} = | V_{negative\text{-}measured} - V_{positive\text{-}measured} |$
    b. Enter V_{diff} in the worksheet.
    c. Calculate *Gain Accuracy* as follows:

       $Gain\ Accuracy = ((V_{diff} - V_{diffExpected})/V_{diffExpected}) \times 100\%$
    d. Enter the *Gain Accuracy* value in the worksheet and in the test record.
19. Repeat steps *16* on page 243 through *18* on page 244 for all vertical scale settings in the work sheet and the test record.
20. *Repeat tests at 1 MΩ impedance as follows:*
    a. Set the calibrator to **0** volts and **1 MΩ** output impedance.
    b. Double-tap the badge of the channel being tested.
    c. Set the **Termination** to **1 MΩ**
    d. Repeat steps *16* on page 243 through *19* on page 244 for all vertical scale settings in the test record.
21. *Repeat the procedure for all remaining channels:*
    a. Set the calibrator to **0** volts and **50 Ω** output impedance.
    b. Move the calibrator output to the next channel input to be tested.

c. Double-tap the channel badge of the channel that you have finished testing and set **Display** to **Off**.
d. Double-tap the **Mean** measurement badge.
e. Tap the **Configure** panel.
f. Tap the **Source 1** field and select the next channel to test.
g. Starting from step*16* on page 243, set the values from the test record for the channel under test, and repeat the above steps until all channels have been tested.

22. Touch outside a menu to close the menu.

Check DC offset accuracy

This test checks the offset accuracy at 50 Ω and 1 MΩ input impedances.

1. Connect the oscilloscope to a calibrated 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: Set the generator output to Off or 0 volts before connecting, disconnecting, or moving the test hookup during the performance of this procedure. The generator is capable of providing dangerous voltages.
2. Tap **File** > **Default Setup**.
3. Double-tap the **Acquisition** badge and set **Acquisition Mode** to **Average**.
4. Set the **Number of Waveforms** to **16**.
5. Tap outside the menu to close the menu.
6. Double-tap the **Trigger** badge and set the trigger **Source** to **AC line**.
7. Add the **Mean** measurement to the Results bar:
   a. Tap the **Add New... Measure** button to open the **Add Measurements** menu.
   b. Set the **Source** to **Ch 1**.
   c. In the **Amplitude Measurements** panel, double-tap the **Mean** button to add the Mean measurement badge to the Results bar.
8. Tap outside the menu to close it.
9. Double-tap the **Mean** results badge.
10. Tap **Show Statistics in Badge**.
11. Tap **FILTER/LIMIT RESULTS** to open the panel.
12. Tap **Limit Measurement Population** to toggle it to **On.**
13. Tap outside the menu to close it.
14. Tap the channel button on the Settings bar to add the channel under test to the Settings bar.
15. Double-tap the channel under test badge to open its configuration menu and change the vertical settings:
    a. Set **Vertical Scale** to **1 mV/div**.
    b. Set **Offset** to **900 mV**.
    c. Set **Position** to 0 by tapping **Set to 0**.
    d. Set **Termination** to **50 Ω**.
    e. Tap **Bandwidth Limit** and set to **20 MHz**.
    f. Tap outside the menu to close it.
16. Set the calibrator output to **+900 mV**, as shown in the test record, and turn the calibrator output On.
17. Enter the Mean measurement value in the test record.
18. Double-tap the channel under test badge to open its configuration menu and change the **Offset** to **-900 mV**.
19. Set the calibrator output to **-900 mV**, as shown in the test record.
20. Enter the Mean measurement value in the test record.
21. Repeat step *15* on page 245 through *20* on page 245, changing the channel vertical settings and the calibrator output as listed in the test record for the channel under test.

22. *Repeat the channel tests at 1 MΩ impedance as follows:*
    a. Set the calibrator output to Off or 0 volts.
    b. Change the calibrator impedance to **1 MΩ** and voltage to **+900 mV**.
    c. Turn the calibrator output On.
    d. Repeat steps *15* on page 245 through *20* on page 245, changing the channel **Termination** to **1 MΩ** and the vertical Offset value and the calibrator output as listed in the 1 MΩ test record for the channel under test.
23. *Repeat the procedure for all remaining channels as follows:*
    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.
    d. Set the calibrator to **0** volts and **50 Ω** output impedance.
    e. Move the calibrator output to the next channel input to test.
    f. Double-tap the channel badge of the channel that you have finished testing and set **Display** to **Off**.
    g. Tap the channel button on the oscilloscope Settings bar of the next channel to test.
    h. Starting from step , repeat the procedure until all channels have been tested.

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

   Warning: Set the generator to off or 0 volts before connecting, disconnecting, and/or moving the test hookup during the performance of this procedure. The generator is capable of providing dangerous voltages.
2. Tap **File** > **Default Setup** to reset the instrument and add the channel 1 badge and signal to the display.
3. *Add the peak-to-peak measurement as follows:*
    a. Tap the **Add New. Measure** button.
    b. Set the **Source** to the channel under test.
    c. In the **Amplitude Measurements** panel, double-tap the **Peak-to-Peak** measurement button to add the measurement badge to the Results bar.
    d. Tap outside the menu to close it.
    e. Double-tap the **Peak-to-Peak** results badge.
    f. Tap **Show Statistics in Badge**.
    g. Tap **FILTER/LIMIT RESULTS** to open the panel.
    h. Tap **Limit Measurement Population** to toggle it to **On.**
    i. Tap outside the menu to close it.
4. Set the channel under test settings:
    a. Double-tap the badge of the channel under test to open its configuration menu.
    b. Set **Vertical Scale** to **1 mV/div**.
    c. Set **Termination** to **50 Ω**.
    d. Tap outside the menu to close it.
5. Adjust the leveled sine wave signal source to display a waveform of 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. Set the generator output to obtain as many vertical divisions of signal as possible.

6. Double-tap the **Horizontal** badge in the Settings bar.
7. Set the **Horizontal Scale** to **1 ms/division**.
8. Tap outside the menu to close it.
9. Record the **Peak-to-Peak** measurement in the **V** $_{in\text{-}pp}$ entry of the test record.
10. Double-tap the **Horizontal** badge in the Settings bar.
11. Set the **Horizontal Scale** to .
12. Adjust the signal source to the maximum bandwidth frequency for the bandwidth and model being tested.
13. *Record the peak-to-peak measurement as follows:*
    a. Record the **Peak-to-Peak** measurement at the new frequency in the **V** $_{bw\text{-}pp}$ entry of the test record.
14. Use the values of *V bw-pp* and *V in-pp* recorded in the test record, and the following equation, to calculate the Gain at bandwidth:

    Gain = *Vbw-pp* / *Vin-pp*.

    To pass the performance measurement test, Gain should be ≥ 0.707. Enter *Gain* in the test record.
15. Repeat steps *4* on page 246 through *14* on page 247 for all combinations of Vertical Scale settings listed in the test record.
16. *Repeat the tests at 1 MΩ impedance as follows:*
    a. Set the calibrator output to Off or 0 volts.
    b. Change the calibrator impedance to **1 MΩ**.
    c. Double-tap the badge of the channel under test to open its menu.
    d. Set the **Termination** to **1 MΩ**.
    e. Repeat steps *4* on page 246 through *16* on page 247 , but leave the termination set to **1 MΩ** .
17. *Repeat the test for all remaining channels as follows:*
    a. Set the calibrator to **0** volts and **50 Ω** output impedance.
    b. Move the calibrator output to the next channel input to be tested.
    c. Double-tap the channel badge of the channel that you have finished testing and set **Display** to **Off**.
    d. Tap the channel button on the oscilloscope Settings bar of the next channel to test.
    e. Double-tap the **Peak-to-Peak** measurement badge.
    f. Tap the **Configure** panel.
    g. Tap the **Source 1** field and select the next channel to test.
    h. Starting from step *4* on page 246, repeat the procedure until all channels have been tested.

Check random noise, sample acquisition mode (10, 8, and 6 GHz options)

This test checks random noise at 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. Tap **File** > **Default Setup**.
3. Add the **AC RMS** measurement:
    a. Tap the **Add New... Measure** button.
    b. Set the **Source** to the channel being tested.
    c. In the **Amplitude Measurements** panel, double-tap the **AC RMS** measurement button to add the measurement badge to the Results bar.
    d. Tap outside the menu to close it.

e. Double-tap the **AC RMS** measurement badge and tap **Show Statistics in Badge** to display statistics in the measurement badge.
f. Tap the **Filter / Limit Results** panel.
g. Turn on **Limit Measurement Population**.
h. Set the limit to **100**.
i. Tap outside the menu to close it.

4. Set up the Horizontal mode:
   a. Double-tap the **Horizontal** setting badge.
   b. Set **Horizontal Mode** to **Manual**.
   c. Set the **Sample Rate** to **25 GS/s** or **50G/S**.
   d. Set the **Record Length** to **2 Mpts**.
   e. Tap outside the menu to close it.
5. Double-tap the Channel badge of the channel being tested.
6. Set the **Vertical Scale** value to **1 mV**.
7. *Check **50 Ω** termination as follows:*
   a. In the Channel badge, set **Termination** to **50 Ω**.
   b. Tap the **Bandwidth Limit** field and select the highest frequency listed.
   c. Set the channel vertical Position value to **340 mdivs**.
   d. Once the measurement count (N) in the measurement badge reaches 100, record the AC RMS Mean value (the **µ** readout).
   e. Set the channel vertical Position value to **360 mdivs**.
   f. Once the measurement count (N) in the measurement badge reaches 100, record the AC RMS Mean value (the **µ** readout).
   g. Average the two values and record the result in the **1 mV/div** row of the **50 Ω** column of the Test Result record.
8. Repeat step 7 on page 248 for all frequencies above 4 GHz
9. *Repeat the 50 Ω test 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 on page 248 through 8 on page 248.
10. *Repeat all tests for the remaining input channels:*
    a. Double-tap the **AC RMS** measurement badge.
    b. Tap the **Configure** panel.
    c. Tap the **Source 1** field and select the next channel to test.
    d. Double-tap the channel badge of the channel that you have finished testing and set **Display** to **Off**.
    e. Tap the channel button on the oscilloscope Settings bar of the next channel to test.
    f. Double-tap the channel badge for the channel being tested.
    g. Starting at step 6 on page 248, repeat these procedures for each input channel.

Check random noise, High Res mode

This test checks random noise at 1 M Ω and 50 Ω for each channel in High Res 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. Tap **File** > **Default Setup**.
3. Double-tap the **Acquisition** badge and set **Acquisition Mode** to **High Res**.
4. Add the **AC RMS** measurement:
   a. Tap the **Add New... Measure** button to open the **Add Measurements** menu.
   b. Set the **Source** to the channel being tested.
   c. In the **Amplitude Measurements** panel, double-tap the **AC RMS** button to add the measurement badge to the Results bar.
   d. Tap outside the menu to close it.
   e. Double-tap the **AC RMS** measurement badge and tap **Show Statistics in Badge** to display statistics in the measurement badge.
   f. Tap the **Filter/Limit Results** panel.
   g. Turn on **Limit Measurement Population**.
   h. Set the limit to **100**.
   i. Tap outside the menu to close it.
5. Set up the Horizontal mode:
   a. Double-tap the **Horizontal** setting badge.
   b. Set Horizontal Mode to **Manual**.
   c. Set the Sample rate to **25G/S, 12.5G/S, or 6.25G/S** .
   d. Set the Record Length to **2 Mpts**.
   e. Tap outside the menu to close it.
6. *Check **1 M Ω** termination as follows:*
   a. Double-tap the Channel badge of the channel being tested.
   b. Set the **Vertical Scale** value to **1 mV**.
   c. Set **Termination** to **1 M Ω**.
   d. Tap the **Bandwidth Limit** field and select the highest frequency listed.
   e. Set the channel **Position** value to **340 mdivs**.
   f. Once the measurement count (N) in the measurement badge reaches 100, record the AC RMS Mean value (the **µ** readout).
   g. Set the channel **Position** value to **-340 mdivs**.
   h. Once the measurement count (N) in the measurement badge reaches 100, record the AC RMS Mean value (the **µ** readout).
   i. Average the two values and record the result in the **1 mV/div** row of the **1 MΩ** column of the random noise, High Res mode Test Result record.
7. Repeat step *6* on page 249 for all frequencies below 500 MHz
8. *Check **50 Ω** termination as follows:*
   a. In the Channel badge, set **Termination** to **50 Ω**.
   b. Tap the **Bandwidth Limit** field and select 4 GHz or the highest frequency listed.
   c. Set the channel **Position** value to **340 mdivs**.
   d. Once the measurement count (N) in the measurement badge reaches 100, record the AC RMS Mean value (the **µ** readout).
   e. Set the channel **Position** value to **-340 mdivs**.

f. Once the measurement count (N) in the measurement badge reaches 100, record the AC RMS Mean value (the **µ** readout).

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

9. Repeat step *8* on page 249 for all frequencies below 4 GHz.

10. *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* on page 249 through *9* on page 250.

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

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

b. Tap the **Configure** panel.

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

d. Double-tap the channel badge of the channel that you have finished testing and set **Display** to **Off**.

e. Tap the channel button on the oscilloscope Settings bar of the next channel to test.

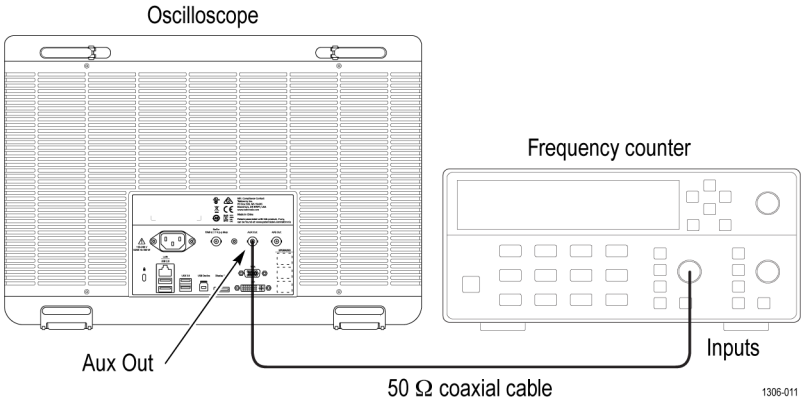
f. Double-tap the channel badge for the channel being tested.

g. Starting at step *6* on page 249, repeat these procedures for each input channel.

Check long term samples rate and delay time accuracy

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

1. Connect a 50 Ω cable from the Aux Out connector to the frequency counter input as shown in the following figure.



2. Tap **File** > **Default Setup**.
3. Tap **Utility** > **I/O**.
4. Tap **AUX OUT** to open its configuration menu.
5. Tap **Reference Clock** to send the clock to the **Aux Out** connector.
6. Check the reading on the frequency counter. Enter the value in the Test record.

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

   Warning: Set the generator output to Off or 0 volts before connecting, disconnecting, or moving the test hookup during the performance of this procedure. The generator is capable of providing dangerous voltages.

   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 table. Be sure to connect channel D0 to both the corresponding signal pin and to a ground pin on the adapter.
3. Tap **File** > **Default Setup**. This resets the instrument and adds the channel 1 badge and signal to the display.
4. *Display the digital channels and set the thresholds as follows:*
   a. Double-tap the badge of the channel under test on the Settings bar.
   b. Double-tap the **Threshold** field at the bottom of the menu and set the value to **0 V**.
   c. Tap **Set All Thresholds**. All thresholds are now set for the 0 V threshold check.
   d. Tap outside the menu to close it.
5. Double-tap the **Horizontal** badge in the Settings bar.
6. Set the **Horizontal Scale** to **10 ns/div**.
7. Tap outside the menu to close it.
8. Set the calibrator DC voltage output (Vs) to **-400 mV**.
9. Wait 1 second. Verify that the logic level is low on **D0**.
10. 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 a steady high.
11. Record this Vs value as **Vs-** for D0 of the test record.
12. Double-tap the **Trigger** badge and set the **Slope** to **Falling** edge.
13. Set the DC voltage source (Vs) to **+400 mV**.
14. Wait 1 second. Verify that the logic level is high.
15. 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 a steady low.
16. Record this Vs value as **Vs+** for D0 of the test record.
17. Find the average using this formula: $V_{sAvg} = (V_{s-} + V_{s+})/2$.
18. Record the average as the test result for D0 in the test record. The test result should be between the low and high limits.
19. *Repeat the procedure for all remaining digital channels as follows:*
    a. Connect the next digital channel to be tested (D1, D2, and so on) to the DC voltage source.
    b. Repeat steps *8* on page 251 through *19* on page 251, until all digital channels have been tested for this input channel.
20. *Repeat the procedure for all remaining input channels as follows:*
    a. Move the TLP058 digital probe from channel 1 to channel 2.

b. Set the generator output to 0 volts and Off.

c. Repeat steps starting at 2 on page 251 for the channel being tested (channel 2, channel 3, and so on).

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. Tap **File** > **Default Setup**. This resets the instrument and adds the channel 1 badge and signal to the display.
3. Double-tap the badge of the channel 1 badge to open its configuration menu.
4. Set the **Vertical Scale** to **1 V/div**.
5. Tap outside the menu to close it.
6. Double-tap the **Horizontal** badge in the Settings bar.
7. Set the **Horizontal Scale** to **400 ns/div**.
8. Tap outside the menu to close it.
9. *Record the Maximum and Minimum measurements at 1 MΩ termination as follows:*

   a. Tap the **Add New... Measure** button.

   b. In the Amplitude Measurements panel, set the **Source** to **Ch 1**.

   c. Double-tap the **Maximum** button to add the measurement badge to the Results bar.

   d. Double-tap the **Minimum** button to add the measurement badge to the Results bar.

   e. Tap outside the menu to close it.

   f. Double-tap the **Maximum** results badge.

   g. Tap **Show Statistics in Badge**.

   h. Tap **FILTER/LIMIT RESULTS** to open the panel.

   i. Tap **Limit Measurement Population** to toggle it to **On**.

   j. Tap outside the menu to close it.

   k. Double-tap the **Minimum** results badge.

   l. Tap **Show Statistics in Badge**.

   m. Tap **FILTER/LIMIT RESULTS** to open the panel.

   n. Tap **Limit Measurement Population** to toggle it to **On**.

   o. Tap outside the menu to close it.

   p. Enter the Maximum and Minimum measurement readings in the 1 MΩ row of the test record.
10. *Record the Maximum and Minimum measurements at 50 Ω termination as follows:*

    a. Double-tap the **Ch 1** badge to open its configuration menu.

    b. Set **Termination** to **50 Ω**.

    c. Tap outside the menu to close it.

    d. 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 DC voltage accuracy of the Digital Volt Meter (DVM) option. The DVM option is available for free when you register the instrument at tek.com.

Procedure

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.

   Warning: Set the generator output to Off or 0 volts before connecting, disconnecting, or moving the test hookup during the performance of this procedure. The generator is capable of providing dangerous voltages.
2. Set the calibrator impedance to **1 MΩ**.
3. Tap **File** > **Default Setup**. This resets the instrument and adds the channel 1 badge and signal to the display.
4. *Set the channel settings:*
   a) Double tap the badge of the channel under test to open its menu.
   b) Check that **Position** is set to **0 divs**. If not, set the position to 0 divisions.
   c) Confirm that **Termination** is set to **1 MΩ**.
   d) Set the **Bandwidth Limit** to **20 MHz**.
5. Set the calibrator impedance to **1 MΩ**.
6. Double-tap the **Horizontal** badge and set **Horizontal Scale** to **1 ms/div**.
7. Tap outside the menu to close it.
8. Double-tap the **Acquisition** badge and set the **Acquisition Mode** to **Average**.
9. Verify or set the **Number of Waveforms** to **16**.
10. Tap outside the menu to close it.
11. Double-tap the **Trigger** badge and set the **Source** to **AC Line**.
12. Tap outside the menu to close it.
13. Tap the **DVM** button to add the DVM badge to the Results bar.
14. In the **DVM** menu, set **Source** to the channel to be tested.
15. Set **Mode** to **DC**.
16. Tap outside the menu to close it.
17. Set the calibrator to the input voltage shown in the test record (for example, –5 V for a 1V/div setting).
18. In the channel under test menu, set the **Offset** value to that shown in the test record (for example, –5 V for –5 V input and 1`V/div setting).
19. Set the **Vertical Scale** field to match the value in the test record (for example, 1 V/div).
20. Enter the measured value on the DVM badge into the DVM Voltage Accuracy Tests record.
21. Repeat the procedure (steps *17* on page 253, *18* on page 253, *19* on page 253 and *20* on page 253) for each volts/division setting shown in the test record.
22. Repeat all steps, starting with step *4* on page 253, for each oscilloscope channel to check. To set the next channel to test:
    a) Double tap the badge of the channel under test to open its menu.
    b) Set **Display** to **Off.**
    c) Tap the channel button in the Settings bar of the next channel to test to add that channel badge and signal to the display.

Check DVM voltage accuracy (AC)

This test checks the AC voltage accuracy of the Digital Volt Meter (DVM) option. The DVM option is available for free when you register the instrument at tek.com.

Procedure

1. Connect the output of the leveled square wave generator (for example, Fluke 9500) to the oscilloscope channel 1 input.

   Warning: Set the generator output to Off or 0 volts before connecting, disconnecting, or moving the test hookup during the performance of this procedure. The generator is capable of providing dangerous voltages.
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} at 1 kHz).
4. Tap **File** > **Default Setup** to reset the instrument and add the channel 1 badge and signal to the display.
5. Tap the **DVM** button to add the DVM badge to the Results bar.
6. Set the DVM **Mode** to **AC RMS**.
7. In the DVM menu, set **Source** to the channel to be tested.
8. Double-tap the channel badge of the channel being tested to open its configuration menu.
9. Set **Termination** to **50 Ω**.
10. Use the **Vertical Scale** controls to set the signal height so that the signal covers between 4 and 8 vertical divisions on the screen.
11. Enter the DVM measured value in the test record.
12. Repeat steps *10* on page 254 and *11* on page 254 for each voltage and frequency combination shown in the record.
13. Repeat all steps to test all remaining oscilloscope channels. To set the next channel to test:
    a) Double tap the badge of the channel under test to open its menu.
    b) Set **Display** to **Off.**
    c) Tap the channel button in the Settings bar of the next channel to test to add that channel badge and signal to the display.

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.

Procedure

1. Tap **File** > **Default Setup** to reset the instrument and add the channel 1 badge and signal to the display.
2. Connect the **10 MHz Reference out** from the time mark generator to the **Ref In** connector on the back of the oscilloscope.
3. Connect the output of the time mark generator to the oscilloscope channel input being tested using a 50 Ω cable. Set the time mark generator to a 50 Ω source and a fast rising edge waveform (≥ 3 mV/ns).
4. Set the time mark generator frequency to the first value shown in the test record, starting at **100 Hz**.
5. Set the mark amplitude to **1 V** $_{pp}$, which makes a 2 divisions high waveform.
6. Double-tap the channel badge being tested (starting with channel 1) and set **Termination** to **50 Ω**.
7. Set the channel **Vertical Scale** to **500 mV/div**.
8. Tap outside the menu to close it.
9. Double-tap the **Acquisition** badge and set the **Timebase Reference Source** to .
10. Tap outside the menu to close it.
11. Double-tap the **Horizontal** badge and use the **Horizontal Scale** controls to display at least 2 cycles of the waveform.
12. Tap outside the menu to close it.
13. Double-tap the **Trigger** badge to open its menu.
    a) Set the **Source** field to the input channel being tested.
    b) Tap the **Set to 50%** button to obtain a stable display.
    c) Tap the **Mode & Holdoff** panel to open the **Mode & Holdoff** configuration menu.
    d) In the **Mode & Hold Off** menu, set the **Trigger Frequency Counter** to **On**. The trigger frequency readout is at the bottom of the Trigger badge.
    e) Tap outside the menu to close it.
14. Double-tap the channel badge being tested (starting with channel 1) and use the **Position** controls to vertically center the time mark in the waveform graticule.
15. Enter the value of the trigger frequency (**F** readout in the **Trigger** badge) in the test record for that frequency.
16. Repeat this procedure for each frequency setting shown in the record. Make sure to adjust the Horizontal scale after each calibrator frequency change to show at least two cycles of the waveform on the screen.
17. Repeat all these steps to test 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 a 50 Ω cable from the **AFG Out** connector to the frequency counter input as shown in the following figure.

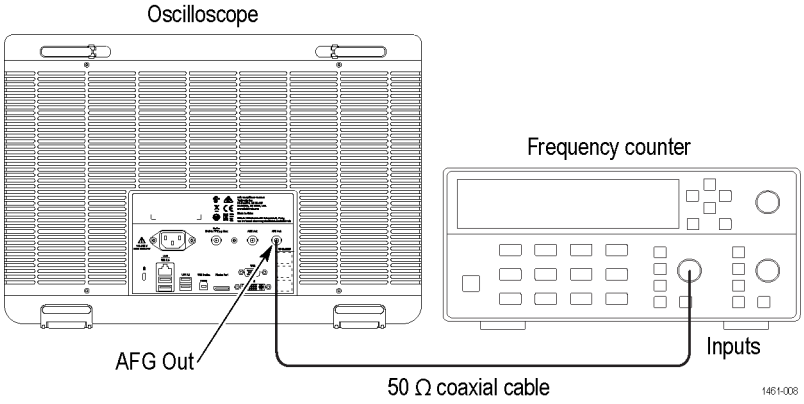


Figure 1: Frequency/period test

2. Tap **File** > **Default Setup** to set the instrument to the factory default settings.
3. Tap the **AFG** button to open the **AFG** menu.
4. Set the arbitrary function generator output as follows:

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

5. Turn on the frequency counter:
   a. Double-tap the **Trigger** badge to open its menu.
   b. Set the **Source** field to the input channel being tested.
   c. Tap the **Set to 50%** button to obtain a stable display.
   d. Tap the **Mode & Holdoff** panel to open the Mode & Holdoff configuration menu
   e. In the Mode & Hold Off menu, set the **Trigger Frequency Counter** to **On**. The trigger frequency readout is at the bottom of the Trigger badge.
   f. Tap outside the menu to close it.
6. Check that the reading of the frequency counter is between **0.999950 MHz** and **1.000050 MHz**. Enter the value in the Test record.
7. Set the arbitrary function generator output as follows:

Select menu	Setting
Waveform Type	Ramp
Frequency	500 kHz

8. 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.

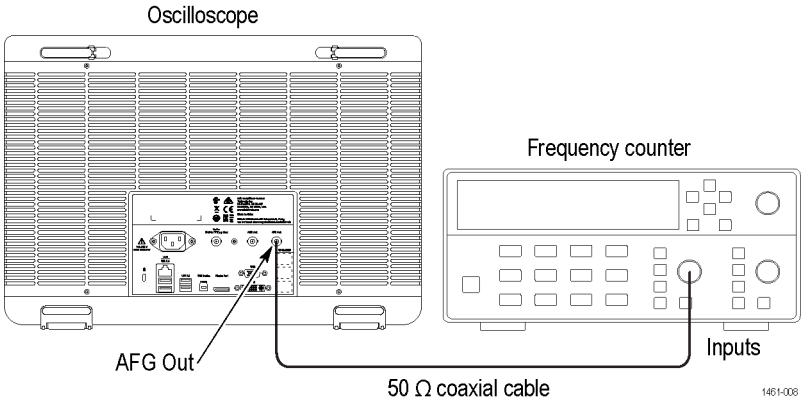


Figure 2: Frequency/period test

2. Tap **File** > **Default Setup** to set the instrument to the factory default settings.
3. Tap the **AFG** button to open the AFG menu.
4. Set the arbitrary function generator as follows:

Select menu	Setting
Waveform Type	Square
Frequency	1.000000 MHz
Amplitude	1.00 V_{PP}
Output	On

5. Turn on the frequency counter:
   a. Double-tap the **Trigger** badge to open its menu.
   b. Set the **Source** field to the input channel being tested.
   c. Tap the **Set to 50%** button to obtain a stable display.
   d. Tap the **Mode & Holdoff** panel to open the Mode & Holdoff configuration menu
   e. In the Mode & Hold Off menu, set the **Trigger Frequency Counter** to **On**. The trigger frequency readout is at the bottom of the Trigger badge.
   f. Tap outside the menu to close it.
6. Check that the frequency counter readout is between **0.999950 MHz** and **1.00005 MHz**. Enter the value in the Test record.
7. Set up the arbitrary function generator as follows:

Select menu	Setting
Waveform Type	Pulse

8. 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.

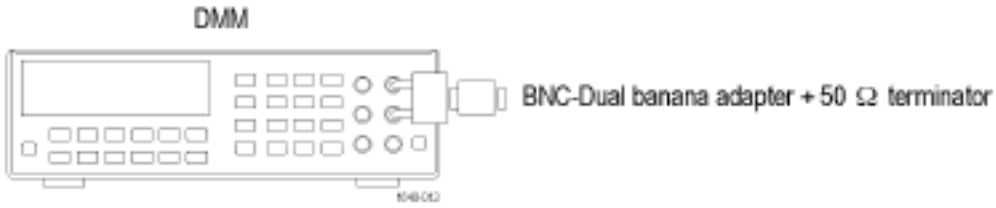


Figure 3: 50 Ω terminator accuracy

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

Table 2: 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.

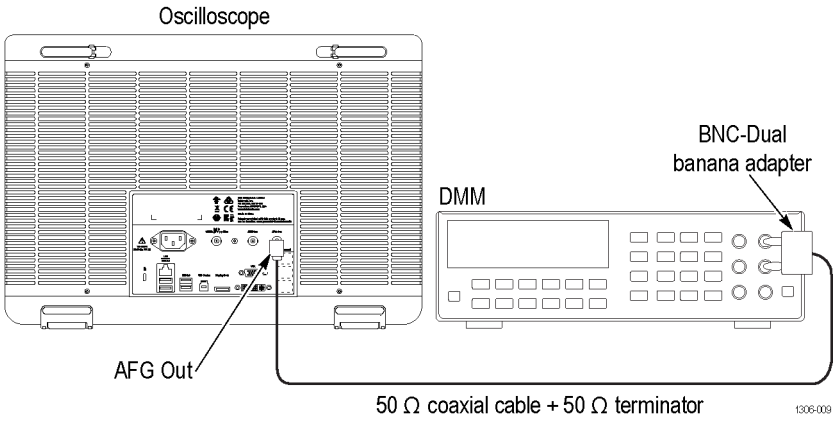


Figure 4: Amplitude test

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 **AC RMS** voltage readout on the DMM.
6. Multiply the DMM voltage by the calculated CF to get the corrected peak to peak voltage. Enter the resulting value 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 on page 259 through 7 on page 259 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 the 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.

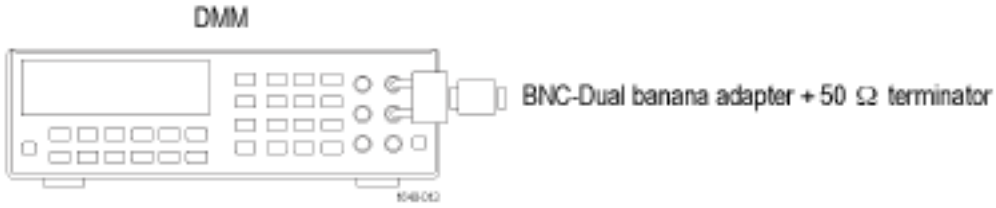


Figure 5: 50 Ω terminator accuracy

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

Table 3: 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 **AFG Output** connector.

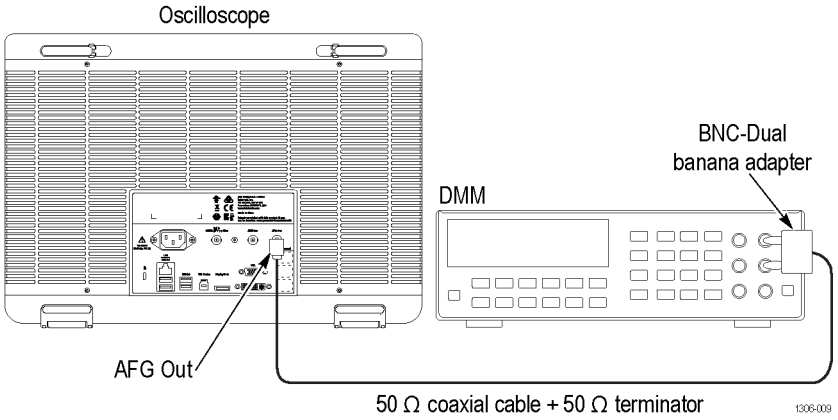


Figure 6: DC offset tests

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

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

5. Measure the voltage readout on the DMM.
6. Multiply the DMM voltage by the calculated CF to get the corrected offset voltage. Enter the resulting value in the Measurement field 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

7. Change the AFG output amplitude to the next value in the table, measure the voltage readout on the DMM, multiply the DMM readout by the calculated CF to get the corrected offset voltage, and enter the resulting value in the Measurement field in the table.
8. Verify that the corrected offset measurements are within the range.

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