

Verifying Specifications

Specifications are separated into two categories, warranted specifications, and nominal or typical characteristics.

Warranted characteristics, Table 1-1, are guaranteed performance specifications. This manual provides performance verification procedures for these specifications.

Nominal and typical characteristics, Table 1-2, are not guaranteed and are provided to characterize the configuration, performance or operation of typical systems.

Other specifications do not have verification procedures because the characteristics are stable and unlikely to change, or the equipment required to verify them is extremely expensive or not readily available.

Physical and environmental specifications are not verified in this manual.

Specifications are subject to change without notice.

Probe Serial Numbers

Because of a change in the probe input connector, the performance specifications are guaranteed only for probes having the following serial numbers:

- A6302 B050000 and above
- A6303 B022000 and above

For detailed information on each probe, refer to the probe *Instructions*.

Table 1-1: Warranted AM 503A Characteristics

Characteristic	AM 503A with A6302	AM 503A with A6303
Bandwidth	DC to 50 MHz	DC to 15 MHz
DC Measurement Accuracy	±3%	±3%
Rise Time	≤ 7 ns	≤ 23 ns

Table 1-2: Nominal and Typical AM 503A Characteristics

Characteristic	Description	Supplemental Information
Aberrations	$\pm 5\%$	(Typical) First 100 ns. Using 50 Ω output termination; after degauss/autobalance; DC coupled; 100 MHz oscillo- scope system.
Amp · Second Product		Refer to Figure 2-11 and the ac- companying discussion for more information.
with A6302 Probe	$1 \times 10^{-4} \text{ A} \cdot \text{s}$ (100 A · μs)	See amp · second curve in the probe manual.
with A6303 Probe	$1 \times 10^{-2} \text{ A} \cdot \text{s}$ (10,000 A · μs)	See amp · second curve in the probe manual.
Battery (AM 503A)		
Battery Life	3 years	(Typical)
Battery Type	1.5 V, silver oxide	Refer to <i>Electrical Parts List</i> .
Deflection Factor		(Nominal) Sequence is in 1–2–5 increments (vertical gain of oscil- loscope is at 10 mV/div).
with A6302 Probe	1 mA/div to 5 A/div	
with A6303 Probe	10 mA/div to 50 A/div	
Frequency Derating		Maximum continuous current rat- ing decreases above 20 kHz (see frequency derating curve in the probe manual.
with A6302 Probe	2.5 A at 10 MHz	
with A6303 Probe	12 A at 10 MHz	
Insertion Impedance		
with A6302 Probe	0.1 Ω at 1 MHz 0.5 Ω at 50 MHz	See insertion impedance curve in the probe manual.
with A6303 Probe	0.02 Ω at 1 MHz 0.15 Ω at 15 MHz	See insertion impedance curve in the probe manual.
Low-Frequency Limit	$\leq 7 \text{ Hz}$	(Typical) AC coupled.
Maximum Continuous Current		Maximum continuous current is derated with frequency (see the probe manual).
with A6302 Probe	20 A (DC + peak AC)	
with A6303 Probe	100 A (DC + peak AC)	
Maximum Pulsed Current		Maximum pulsed current must not exceed the amp-second product.
with A6302 Probe	50 A	
with A6303 Probe	500 A	
Maximum Voltage (bare wire)		
with A6302 Probe	500 V	
with A6303 Probe	700 V	
Power Consumption	17 Watts maximum	

Specifications

Table 1-2: Nominal and Typical AM 503A Characteristics

Characteristic	Description	Supplemental Information
Random Noise		(Typical) Using 50 Ω output termination; after degauss/autobalance; oscilloscope bandwidth limit 100 MHz, AC-coupled, 1 ms/division; AM 503A DC-coupled, 1 mA/division
with A6302 Probe	<4 mV _{RMS}	
with A6303 Probe	<4 mV _{RMS}	

Table 1-3: AM 503A Environmental Characteristics

Characteristic	Description
Altitude	
Operating	4,570 m (15,000 ft) maximum
Non-Operating	15,200 m (50,000 ft) maximum
Ambient Temperature	
Operating	0° C to +50° C
Non-Operating	-55° C to +75° C
Humidity	
Operating	≤ 95% R.H., at 50° C or below
Non-Operating	≤ 95% R.H., at 60° C or below

Table 1-4: AM 503A Physical Characteristics

Characteristic	Description
Net Weights	
TM 502A	4.0 kg (8.75 lb)
AM 503A	0.91 kg (2 lb)
TM 502A/AM 503A (excluding knobs)	
Length	40.7 cm (16.6 in)
Width	14.5 cm (5.7 in)
Height	14.0 cm (5.5 in)