HP 3562A SPECIFICATIONS

Specifications describe the instrument's warranted performance. Supplemental characteristics are intended to provide information useful in applying the instrument by giving typical, but non-warranted, performance specifications. Supplemental characteristics are denoted as 'typical,' 'nominal,' or 'approximately.'

Frequency

Measurement Range: 64 μHz to 100 kHz, both channels, single- or dual-channel operation

Accuracy: ±0.004% of frequency reading

Resolution: Span/800, both channels, single- or dual-channel operation, Linear Resolution mode

Spans:	Baseband	Zoom
# of spans	66	65
min span	10.24 mHz	20.48 mHz
max span	100 kHz	100 kHz
time record (Sec)	800/span	800/span

Window Functions: Flat Top, Hann, Uniform, Force, Exponential and User-Defined

Window Parameters:	Flat Top	Hann	Uniform
Noise Equiv BW (% of span)	0.478	0.188	0.125
3 dB BW (% of span)	0.45	0.185	0.125
Shape factor (60 dB BW/3 dB BW)	2.6	9.1	716

Typical Real Time Bandwidths:

Single-channel, single display	2.5 kHz
Single-channel, Fast Averaging	10 kHz
Dual-channel, single display	2 kHz
Dual-channel, Fast Averaging	5 kHz
Throughput to CS/80 disc	
Single-channel	10 kHz
Dual-channel	5 kHz

Amplitude

Accuracy: Defined as Full Scale Accuracy at any of the 801 calculated frequency points. Overall accuracy is the sum of absolute accuracy, window flatness and noise level.

Absolute Accuracy:

Single Channel (Channel 1 or Channel 2)

±0.15 dB ±0.015% of input range (+27 dBV to −40 dBV, input connections as specified in Cases 1 and 2 below)

±0.25 dB ±0.025% of input range (−41 dBV to −51 dBV, input connections as specified in Cases 1 and 2 below)

DC Response: Auto-Cal and Auto-Zero on

Input Range (dBV rms)	dc Level
+27 to −35	>30 dB below full scale
−36 to −51	>20 dB below ful scale

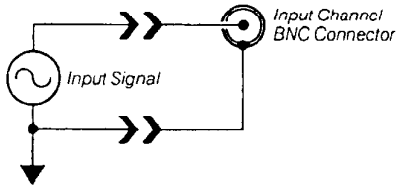
Frequency Response Channel Match:

±0.1 dB, ±0.5 degree (input connections as specified in Cases 1 and 2 below)

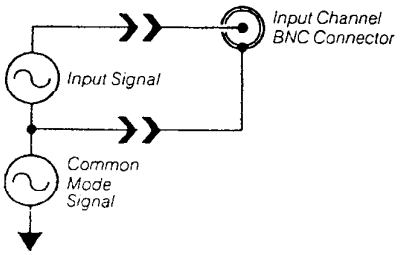
Input Connections:

Cases 1 and 2 are the recommended input connections. For these cases, the amplitude accuracy specified above is applicable.

Case 1

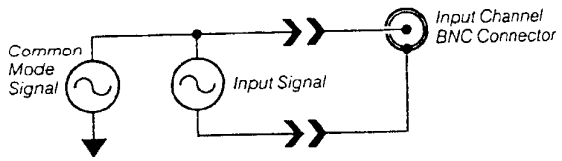


Case 2

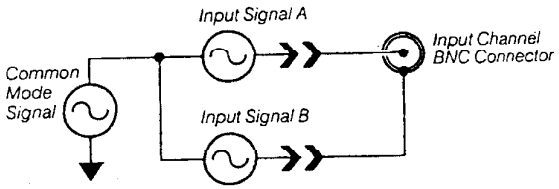


Cases 3 and 4 are input connections which degrade amplitude accuracy. For these cases, the amplitude accuracy specified above must be modified with the accuracy adders stated below.

Case 3



Case 4



Accuracy Adder: Single-channel, inputs connected as shown in Cases 3 and 4 above.
Add ±0.35 dB and ±4.0 degrees to the absolute accuracy.

Accuracy Adder: Dual-channel measurements
Add ±0.35 dB and ±4.0 degrees once for each input connected as shown in Cases 3 and 4 above.

Window Flatness:

Flat Top:	+0, −0.01 dB
Hann:	+0, −1.5 dB
Uniform:	+0, −4.0

Noise Floor: Flat top window, 50 Ω source impedance, −51 dBV range
20 Hz to 1 kHz (1 kHz span) < −126 dBV (−134 dBV/√Hz)
1 kHz to 100 kHz (100 kHz span) < −116 dBV
(−144 dBV/√Hz)

Dynamic Range: All distortion (intermodulation and harmonic), spurious and alias products ≥80 dB below full scale input range (16 averages) <10KΩ termination

Phase

Accuracy: Single channel, input connections as specified above in Cases 1 and 2, referenced to trigger point.

<10 kHz	±2.5 degrees
10 kHz to 100 kHz	±12.0 degrees

Inputs

Input Impedance: 1 MΩ ±5% shunted by <100 pF

Input Coupling: The inputs may be ac or dc coupled; ac rolloff is <3 dB at 1 Hz

Crosstalk: −140 dB (50 Ω source, 50 Ω input termination, input connectors shielded)

Common Mode Rejection:

0 Hz to 66 Hz	80 dB
66 Hz to 500 Hz	65 dB

Common Mode Voltage: dc to 500 Hz

Input Range (dBV rms)	Maximum (ac + dc)
+27 to −12	±42.0 Vpeak
−13 to −51	±18.0 Vpeak*

*For the −43 to −51 dBV input ranges, common mode signal levels cannot exceed ±18 Vpeak or (Input Range) + (Common Mode Rejection), whichever is the lesser level.

Common Mode Voltage: 500 Hz to 100 kHz. The ac part of the signal is limited to 42 Vpeak or (Input Range) + (10 dB), whichever is the lesser level.

Common Mode Distortion: For the levels specified, distortion of common mode signals will be less than the level of the rejected common mode signal.

External Trigger Input Impedance: Typically 50 kΩ ±5%

External Sampling Input: TTL compatible input for signals ≤256 kHz (nominal maximum sample rate).

External Reference Input:
Input Frequencies: 1, 2, 5 or 10 MHz ±0.01%
Amplitude Range: 0 dBm to +20 dBm (50 Ω)

Trigger

Trigger Modes: Free Run, Input Channel 1, Input Channel 2, Source and External Trigger. Free Run applies to all Measurement Modes; Input Channel 1, Input Channel 2, Source and External Trigger apply to the Linear Resolution, Time Capture and Time Throughput measurement modes.

Trigger Conditions:
Free Run: A new measurement is initiated by the completion of the previous measurement.

Input: A new measurement is initiated when the input signal to either Channel 1 or Channel 2 meets the specified trigger conditions. Trigger Level range is ± 100%of Full Scale Input Range; Trigger Level is user-selected in steps of (Input Range in volts)/128.

Source: Measurements are synchronized with the periodic signal types (burst random, sine chirp and burst chirp).

External: A new measurement is initiated by a signal applied to the front panel External Trigger input. Trigger Level range is ±10 Vpeak; Trigger Level is user selected in 80 mV steps.

Trigger Delay:
Pre-Trigger: The measurement can be based on data from 1 to 4096 samples (1/2048 to 2 time records) prior to trigger conditions being met. Resolution is 1 sample (1/2048 of a time record).

Post-Trigger: The measurement is initiated from 1 to 65,536 samples (1/2048 to 32 time records) after the trigger conditions are met. Resolution is 1 sample (1/2048 of a time record).

Source

Band limited, band translated random noise, burst random, sine chirp, burst chirp, as well as fixed sine and swept sine signals are available from the front panel Source output. DC Offset is also user-selectable.

Output Impedance: 50 Ω (nominal)

Output Level: ≤ ±10 Vpeak (ac + dc) into a ≥10 kΩ, <1000 pF load. Maximum current = 50 mA.

AC Level: ±5 Vpeak (≥10kΩ, <1000 pF load)

DC Offset: ±10 Vpeak in 100 mV steps. Residual offset at 0 V offset ≤10 mV.

% In-Band Energy: (1 kHz span, 5 kHz center frequency)
Random Noise: 70%
Sine Chirp: 85%

Accuracy and Purity: Fixed or Swept Sine
Flatness: ±1 dB (0 to 65 kHz),
+1, −1.5 dB (65 kHz to 100 kHz)

Distortion: (including subharmonics)
dc to 10 kHz −60 dB
10 kHz to 100 kHz −40 dB

General

Specifications apply when AUTO CAL is enabled, or within 5°C and 2 hrs of last internal calibration (except for transient environmental changes).

Ambient temperature: 0° to 55° C.
Relative Humidity: ≤95% at 40°C.
Altitude: 4,572 m (15,000 ft)

Storage:
Temperature: −40° to +75°C.
Altitude: ≤ 15,240m (50,000 ft)

Power:
115 VAC +10% — 25%, 48 to 440 Hz
230 VAC +10% — 25%, 48 to 66 Hz
450 VA maximum

Weight:
26 kg (56 lbs) net
35 kg (77 lbs) shipping

Dimensions:
222 mm (8.75 in) high
426 mm (16.75 in) wide
578 mm (22.75 in) deep

HP-IB:
Implementation of IEEE Std 488-1978
SH1 AH1 T5 TE0 L4 LE0 SR1 RL1 PP0 DC1 DT1 C0
Supports the 91XX and 794X families of HP disc drives as well as Hewlett-Packard Graphics Language (HP-GL) digital plotters.

ACCESSORIES SUPPLIED

Table A-1 lists the accessories supplied with the HP 3562A.

Table A-1 Accessories Supplied

HP 3562A Operating Manual	Part Number 03586-90000
HP 3562A Programming Manual	Part Number 03586-90020
HP 3562A Service Manual	Part Number 03586-90010

ACCESSORIES AVAILABLE

Table A-2 lists the accessories available for the HP 3562A. These accessories may be obtained through the HP Sales and Support Offices listed at the back of this manual.

Table A-2 Accessories Available

Transit case	Part Number 9211-2663
BNC cables and adapters	Contact Sales Representative or refer to current HP catalog

OPTIONS

Table A-3 lists the options available for the HP 3562A. These options may be ordered with the instrument by ordering the option number. They may also be ordered after the instrument has been purchased by ordering the option part number.

Table A-3 Options

Description	Option Number	Part Number
Front Handle Kit	907	5061-0091
Rack Mount Kit	908	5061-0079
Rack Mount & Front Handle Kit	909	5061-0085
Extra Operating, Programming, and Service Manuals	910	03562-90000 03562-90030 03562-90010
Delete Service Manual	914	