

# FREQUENCY/TIME STANDARDS & SYNCHRONIZATION

## Distribution Amplifiers

HP 5087A, E1750A, E1752A

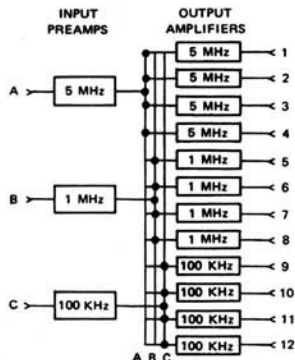


HP 5087A

### HP 5087A Distribution Amplifier

The HP 5087A distribution amplifier provides the flexibility needed for distribution of frequency standard outputs, where multiple-output frequencies are required. The modular construction allows you to configure the product for a variety of distribution needs.

Several configurations are available, and special combinations of input and output modules can be supplied. Amplifiers can be added or the configuration easily changed with the HP 10812A options.



HP 5087A with Option 031

### HP 5087A Specifications

**Inputs:** Up to three, rear-panel BNC

**Frequencies:** 10 MHz, 5 MHz, 1 MHz, or 100 kHz

**Level:** 0.3 to 3.0 V rms, 50  $\Omega$

**Outputs:** Up to 12 rear-panel BNC

**Frequencies:** 10 MHz, 5 MHz, 1 MHz, or 100 kHz

**Level:** 0 to 3 V into 50  $\Omega$  (screwdriver adjustment)

**Harmonic Distortion:** > 40 dB below rated output

**Non-harmonic Distortion:** > 80 dB below rated output

#### Isolation

**Load** (open or short on any other channel)

**Amplitude Change:** 0.1%

**Phase Change:** < 0.1 ns at 5 or 10 MHz

< 0.5 ns at 1 MHz

< 5.0 ns at 100 kHz

**Injected Signal:** 1 V signal up to 50 MHz applied to any output except 10 MHz, will be down >60 dB in all other outputs; 10 MHz output channel will be down >50 dB

**SSB Phase Noise** (5 MHz): >145 dB below signal in 1 Hz BW for frequencies >1 kHz from carrier

**Short-Term Stability Degradation** (5 MHz): <1 x 10<sup>-12</sup> in 10 kHz bands (1-s average)

#### Environmental

**Temperature:** MIL-E-16400, class 4

**Operating:** 0° to 50° C

**Storage:** -62° to +75° C

#### Stability

**Amplitude:**  $\pm 0.5$  dB, 0° to 50° C

**Phase:** <0.1 ns/° C, 5 and 10 MHz

**Humidity:** 95% at 40° C

**Altitude:** Up to 30,000 ft.

#### General

**Power:** 115 or 230 V  $\pm 10\%$ , 48 to 440 Hz, 20 VA, maximum,

or 22 to 30 Vdc, 600 mA, maximum

**Size:** 425 mm W x 88 mm H x 286 mm D (16.7 in x 3.5 in x 11.3 in)

**Weight:** Typical, Option 031; net, 7 kg (15 lb)



HP E1750A

HP E1752A

### HP E1750A VXI Distribution Amplifier

These VXI distribution amplifier modules buffer and distribute standard clock and other signals in laboratory, factory, and general ATE environments. They feature one input and six outputs per module, and are suited to distributing a wide variety of signals in a single ATE system or throughout a building. Principal features of the product include:

- Broadband sine wave or pulse buffering/distribution
- Built-in AGC for no level adjustments
- Preservation of input phase and frequency characteristics with changing environment (temperature, humidity, etc.)

### General Specifications

#### Input Ranges

	HP E1750A	HP E1752A
Freq. min.	100 KHz	1 pps
Freq. max.	10 MHz	10 million pulses per second
Level, min.	+7 dBm	Logic LO: $\leq 0.8$ V
Level, max.	+19 dBm	Logic HI: $2.0 \text{ V} \leq V_{cc}$
Damage	+27 dBm	+14 V, -9 V
Impedance	50 $\Omega$	50 $\Omega$

#### HP E1750A Outputs, 50 $\Omega$ load

Level	+13 dBm $\pm 1$ dBm
Phase noise	< -145 dBc
Port-to-port isolation (open/short loads)	
phase modulation	< -100 dBc
phase change, peak	< $\pm 0.012^\circ$

#### HP E1752A Outputs, 50 $\Omega$ load

Rise-fall time	<5 ns
Pulse amplitude	>3.5 V
Propagation delay	22 ns, typical
Jitter	<1 ns rms

### Ordering Information

**HP 5087A Distribution Amplifier Mainframe** \$3,875

**Opt 908 Rack Flange Kit** +\$50

#### Normal Configurations (input and output amplifiers)

**Opt 031** 5, 1, 0.1 MHz Inputs; 4 Outputs at Each +\$2,650

**Opt 032** Single 5 MHz Input and 12 Outputs +\$2,345

**Opt 033** Single 10 MHz Input and 12 Outputs +\$2,345

**Opt 034** Single 5 MHz Input, 4 Each; Outputs +\$2,755

at 5, 1, and 0.1 MHz

#### Special HP 5087A Configurations

**Input Preamplifiers** (up to 3 total)

**Opt 004** Input Preamplifier (0.1 to 10 MHz) +\$153

**Opt 005** 5 to 1 MHz Input Divider +\$224

**Opt 006** 1 to 0.1 MHz Input Divider +\$375

**Opt 011** 5 to 10 MHz Input Doubler +\$365

**Opt 013** 10 to 5 MHz Input Divider +\$420

**Opt 014** 10 to 1 MHz Input Divider +\$375

**Output Amplifiers** (up to 12 total)

**Opt 001** 5 MHz Output Amplifier +\$214

**Opt 002** 1 MHz Output Amplifier +\$224

**Opt 003** 0.1 MHz Output Amplifier +\$255

**Opt 012** 10 MHz Output Amplifier +\$224

**HP E1750A Broadband Distribution Amplifier** \$2,035

**Opt AV9** Delete Operation and Programming Manual \$0

**HP E1752A Pulse Distribution Amplifier** \$1,830

**Opt AV9** Delete Operation and Programming Manual \$0