

HP 58504A, 58505B, 58509A, 58509F, 58510A, 58513A, 58514A, 58515A, 58516A, 58517A, 58518A-58521A, 58518AA-58521AA

- Complete solutions for GPS antenna systems
- High reliability GPS accessories
- Broad range of products to meet every need



HP GPS Accessories

Complete Your GPS-based Solution with Confidence

High-quality Hewlett-Packard Global Positioning System (GPS) accessories let you configure a complete GPS antenna system with confidence and reliability. These products simplify installation while providing high signal integrity. By providing a range of GPS accessories, HP offers a complete solution—from the GPS antenna to the precise time and frequency reference receivers.

HP GPS accessories include antennas, antenna assemblies, line amplifiers, lightning arresters, distribution amplifiers/splitters, bandpass filters, cables and cable kits—everything you need to for your complete antenna system.

GPS Antennas and Antenna Assemblies

The HP 58504A GPS L1 antenna delivers highly-accurate signals to GPS receivers. Characterized by low noise and high gain, it ensures signal fidelity while simplifying the antenna system architecture and installation. An HP 58510A environmental cover and ground plane is available for additional environmental protection.

For maximum protection, HP offers the HP 58513A antenna assembly. It integrates a stainless steel mast and ground plane with the antenna, antenna cable and environmental cover.

Antenna Specifications

Frequency Range: 1575.42 ± 5 MHz (L1 carrier)
Total Gain: > 30 dBi
Operating Environment: -40° C to +80° C

Lightning Arrester

The bulkhead-mount HP 58505B lightning arrester provides multiple-strike protection for antenna systems and GPS receivers. This compact unit makes installation easy while protecting your investment.

Lightning Arrester Specifications

Frequency Range: 1.2 to 2.0 GHz
Surge: 20 kA IEC 801-5 8/20 microsecond waveform
Turn-on: +7, -1 Vdc
Turn-on Time: 4 ns for 2 kV/ns
Operating Environment: -40° C to +80° C

Line Amplifiers

The HP 58509A GPS line amplifier is a high-gain, broadband amplifier that allows extended cable runs from receiver to the antenna. The HP 58509F line amplifier integrates an L1 bandpass filter, providing the same benefits as the HP 58509A and additional immunity from noise or interference.

Line Amplifier Specifications

HP 58509A
Amplifier Gain: > 20 dB (25 dB typical)
Frequency Range: 750 MHz to 2.4 GHz
HP 58509F
Amplifier Gain: > 20 dB (24 dB typical) at L1
Filter Attenuation: > 7 dB at L1 ± 35 MHz, > 30 dB at L1 ± 140 MHz
HP 58509A and HP 58509F
Operating Environment: -40° C to +80° C

Bandpass Filter

The HP 58514A GPS L1 bandpass filter protects GPS receivers from the effects of noise and interference near the L1 carrier frequency. The filter ensures accurate satellite tracking even in the presence of disturbances.

Bandpass Filter Specifications

Frequency Range: 1575.42 ± 20 MHz (L1 carrier)
Filter Attenuation: > 7 dB at L1 ± 35 MHz, > 30 dB at L1 ± 140 MHz
Operating Environment: -40° C to +80° C

Distribution Amplifier/Splitters

The HP 58515A, HP 58516A and HP 58517A distribution amplifiers/splitters distribute the GPS signal to two, four or eight output ports, respectively. For ease of installation and configuration, these units feature built-in amplification to provide unity gain from input to each of the output ports. High isolation between output ports eliminates the risk of interaction between GPS receivers connected to the distribution amplifier.

Distribution Amplifier/Splitter Specifications

Frequency Range: 1575.42 ± 20 MHz (L1 carrier)
Gain (input to output)
HP 58515A: 3 dB ± 3 dB
HP 58516A: 0 dB ± 3 dB
HP 58517A: 0 dB ± 4 dB
Isolation (Typical)
HP 58515A and HP 58516A: -40 dB
HP 58517A: -35 dB
Operating Environment: 0° C to +55° C

Cables and Cable Kits

HP offers a complete line of antenna cables and interconnect cables for completing your antenna system. The HP 58518A and HP 58519A RG-213 cables provide increased flexibility for installation ease. The HP 58520A and HP 58521A LMR 400 cables feature low-loss and are ideal for installations requiring greater cable lengths. All cables are available in a variety of lengths ranging from 1 meter to 50 meters for RG-213 cables and 1 meter to 330 meters for LMR 400 cables.

For installations requiring greater flexibility or where cables must be pulled through conduit, cable kits are available. These kits provide the raw cable with connector kits. This allows the connectors to be installed once the cable is in place. The HP 58518AA and 58519AA are kit versions of the RG-213 cables and the HP 58520AA and 58521AA are the kit versions of the LMR 400 cables.

Cables and Cable Kits Specifications

Impedance: 50Ω typical
Signal Loss at L1 Frequency
RG-213 Cables: 7.9 dB per 20 meters
LMR 400 Cables: 3.35 dB per 20 meters
Cable (Propagation) Delay
RG-213 Cables: 5.05 ns per meter
LMR 400 Cables: 3.93 ns per meter

Connectors or Connector Kits

HP 58518A/AA, 58520A/AA: One TNC(m) and One N(m)
HP 58519A/AA, 58521A/AA: Two N(m)

Key Literature

GPS Antenna System Configuration Guide, HP P/N 5964-9068E

Ordering Information

HP 58504A GPS Antenna
HP 58505B Lightning Arrester
HP 58509A Line Amplifier
HP 58509F Line Amplifier with L1 Bandpass Filter
HP 58510A Ground Plane and Environmental Cover
HP 58513A Antenna Assembly
HP 58514A L1 Bandpass Filter
HP 58515A 1:2 Distribution Amplifier/Splitter
HP 58516A 1:4 Distribution Amplifier/Splitter
Opt 05Q External Power
HP 58517A 1:8 Distribution Amplifier/Splitter
Opt 05Q External Power
HP 58518A/19A RG-213 Cables
HP 58518AA/19AA RG-213 Cable Kits
HP 58520A/21A LMR 400 Cables
HP 58520AA/21AA LMR 400 Cable Kits