

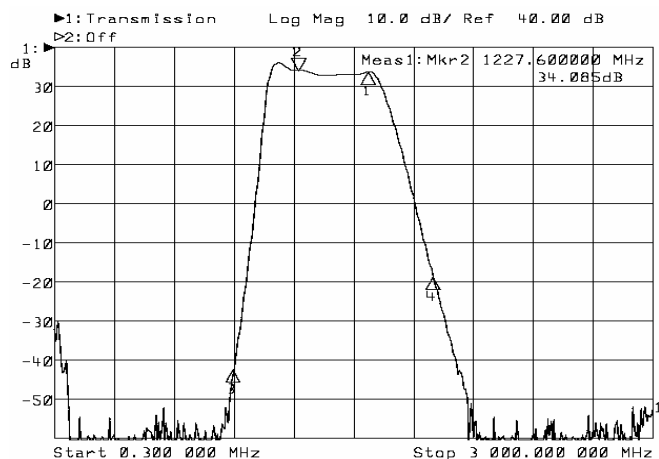
# PTS PRECISION TEST SYSTEMS

## GPS35 Antenna Amplifier



### General Description

The GPS35 is an inline GPS antenna amplifier for both the L1 and L2 frequencies (1575.42 MHz and 1227.6 MHz). It is simply connected between the GPS receiver and the GPS antenna. Power from the GPS receiver, that normally powers the active antenna, now powers both the active antenna and the GPS35. Thus, no extra power supply is needed for the GPS35. The GPS35 can be used with either active or passive GPS antennas by selecting internal jumpers.



The above picture shows the GPS35 frequency response from 300 kHz to 3 GHz. Ultimate rejection is typically > 80 dB

### Various Options and Configurations Available

The GPS35 can be configured to suit your exact requirements. The different configurations and options are explained below:

- DC voltage is normally received from the GPS receiver and not passed through the GPS35 amplifier. This is suitable for passive antennas. The GPS35 operates from 3 to 5 volts at 16 mA.
- Option 01 is a lower gain unit with 20 dB gain. The supply current is also reduced to 12 mA.
- Option 02 allows the DC from the GPS receiver to pass through the amplifier to power an active antenna.

The GPS35 provides a gain of 35 dB at 1227.6 MHz and 1575.42 MHz. With the GPS35 installed, extra lengths of cable can now be used between the antenna and the GPS receiver itself. If low loss cable is used, cable lengths over 350 metres (1150 feet) can be used without any degradation to the GPS signal.

Adding amplifiers however, can cause more problems than they solve. Extra noise can be introduced by the amplifier and nearby transmitters, e.g. cellular or mobile telephone transmitters, can cause overloading of the GPS receivers input, which could cause loss of satellite signals.

The GPS35 has been specially designed to overcome these problems. Ultra low noise amplifiers have been used; together with a band pass filter. The noise figure of the GPS35 is less than 3 dB and signals in the cellular or mobile frequency bands are rejected by more than 35 dB.

- Option 03 adds an external DC power connector. This allows the GPS35 to be powered from an external power supply source of 3 to 5 volts at 16 mA. This is used if the GPS receiver does not supply its own voltage.
- Option 04 is an external power supply used for options 03. It operates from 100 to 240 VAC.
- The connectors are N type as standard. Other connectors are available on special order.

### High Quality of Construction

The GPS35 is made to the highest standards. The RF circuits are housed in an aluminium enclose which has been milled out of a solid piece of aluminium.

### Other Models Available

The GPS25 and GPS26 antenna amplifiers are also available. These have SMA connectors as standard.

## GPS35 SPECIFICATIONS

Specification Parameter	Specification	Comments
Usable Frequency Range	1200 to 1600 MHz	
Input and Output Impedance	50 $\Omega$ nominal	
Gain	35 dB $\pm$ 2 dB @ 1227.6 and 1575.42 MHz	
Input and Output return loss	> 10 dB typical	
Stopband Rejection	35 dB min from 0 to 900 MHz and > 1900 MHz	Typically > 45 dB rejection
Noise Figure	< 3 dB	
Reverse Isolation	> 65 dB	Typically 75 dB
1 dB Compression	-15 dBm	
DC Voltage Required	3.0 V to 5.5 V (Other voltages on special request)	
DC Current of amplifier	19 mA Max	Typically < 17 mA
Max DC Current to antenna	75 mA	With 5V going to antenna
Max DC Current to antenna	30 mA	With 3V going to antenna
Connectors	N type female as standard.	Other connectors on special order
Size	158.0 mm x 30.0 mm x 26.2 mm	Inc. Connectors
Weight	250 grams	
Environmental	-20 °C to +60 °C	
Option 01	Gain reduced to 20 dB and current to 12 mA	
Option 02	DC passes to Antenna (input port)	
Option 03	External 3 - 5 volt power supply connection	
Option 04	Power supply for option 03. 100 – 240 VAC	

Specifications subject to change without notice (270606)

### Precision Test Systems

Head Office - UK	South Africa	USA	Represented locally by:
Precision Test Systems LTD 40 Holkham Avenue, South Woodham Ferrers Essex, CM3 7AU, England Tel: +44 (0) 845 052 0920 Fax: +44 (0) 870 135 4973 Email: uksales@ptsyst.com Web: www.ptsyst.com	Precision Test Systems cc 183 Edison Crescent Hennops Park X7 Pretoria South Africa Tel: +27 (0) 12 653 5848 Email: sasales@ptsyst.com Web: www.ptsyst.com	Precision Test Systems Suite # 981 14781 Memorial Dr. Houston, TX 77079 Tel: 1 888 876 4804 Fax: 1 760 923 6354 Email: usasales@ptsyst.com Web: www.ptsyst.com	