



58532A GPS L1 Reference Antenna

Installation and Assembly Guide
Revision D – August 2007
Part Number 097-58532-01

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Introduction

The 58532A GPS L1 Reference Antenna is one component of a complete line of GPS accessories for your GPS antenna system provided by Symmetricom. These accessories are designed to deliver precise GPS signals over a wide temperature range and in harsh environmental conditions.

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- Description
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Description

The 58532A GPS L1 Reference Antenna delivers clean, accurate L1 carrier frequency signals to GPS synchronization modules and receivers. The antenna operates reliably in a wide range of environmental conditions, and it is characterized by durability, low noise, narrow bandwidth, and high gain.

Designed for outdoor locations, the 58532A Antenna features a threaded Type-N Jack connector that makes it easy to connect directly to the antenna cable. A mounting base (supplied) simplifies installation of the antenna to a mast.

The antenna operates on 5 Volts DC, which is normally supplied from the GPS receiver via the interconnecting cable.

The 58532A GPS L1 Reference Antenna is shown in Figure 1.

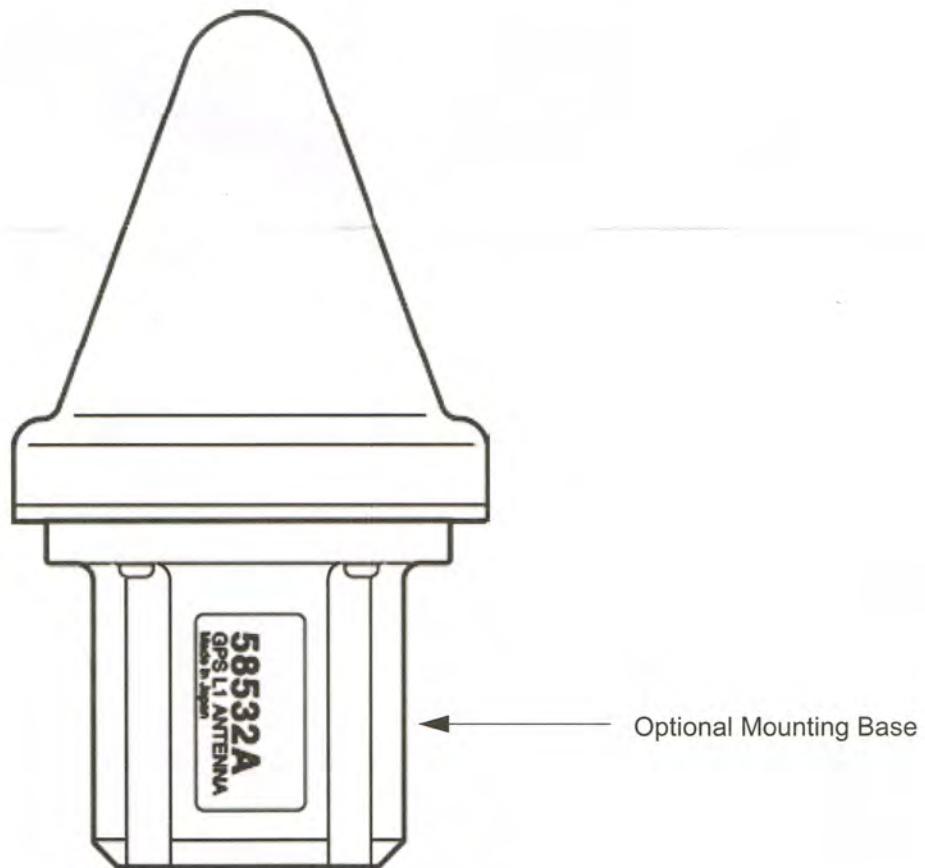


Figure 1 The 58532A GPS L1 Reference Antenna

Installation

Antenna installation depends on a variety of local conditions. Symmetricom offers several methods for mounting the antenna. These solutions include a mounting bracket or clamp to attach a mounting mast to a pipe, wall, or tripod.

Contact Symmetricom for ordering information and additional technical recommendations for installation. See *Contacting Technical Support*, on page 13, for contact details.

Installation Suggestions

1. Mount the antenna on a mast high enough above the surrounding surface to prevent contact with standing water or snow.
2. A good location is one that is easily accessible, away from lightning rods, and one that provides a reasonably clear line of sight between the ground and satellites, from horizon to horizon.
3. Specific decisions on the optimum mounting location of the antenna and recommendations for proper lightning protection (such as lightning rods, arrestors, etc.) are unique to most installations and should be made by qualified personnel.

Parts Supplied

- Antenna
- Mounting base (optional)

Mounting Base

The mounting base contains:

- Four captive cross-recessed pan head screws for attaching to antenna (use small “cross point” (Phillips) screwdriver).
- Two hex set screws (4 mm) for tightening antenna assembly to a mast.

Optional Mounting Mast

A mounting mast is available as Option AUB to the antenna. If this option was not purchased with the antenna, it can be ordered from Symmetricom. The mast is 355 mm (14 in) in length with an outer diameter (O.D.) of 42 mm (1.65 in) and is made of either anodized aluminum or stainless steel. The inner diameter allows you to insert the 58529A Line Amplifier with L1 Bandpass Filter or the 58530A GPS L1 Bandpass Filter for protection from the environment.

Tools Required for Assembly

- Small “cross point” (Phillips) screwdriver for four cross-recessed pan head screws

- Hex wrench for 4mm hex socket set screws



Note: If you are replacing a 58504A antenna with the 58532A antenna, a Type-N plug to TNC jack adapter can be ordered from Symmetricom.

Dimensions of Antenna and Mounting Base

Figure 2 shows the major dimensions of the antenna and mount assembly.

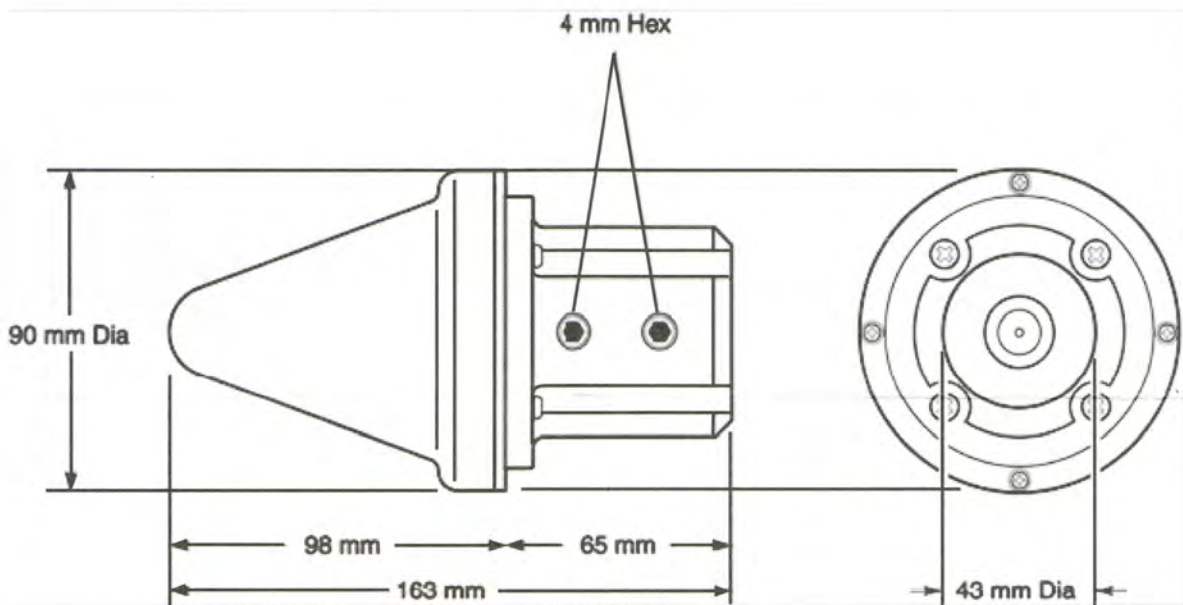


Figure 2 58532A GPS L1 Reference Antenna and Mounting Base Dimensions

Assembly Procedure

The procedure in this section describes how to assemble the 58532A GPS L1 Reference Antenna



Note: Refer to Figure 3 while following this procedure.

1. Route the cable through the mast and the antenna mounting base (if supplied) and the L bracket.
2. Attach the cable to the antenna connector and tighten. If the L bracket is used, firmly tighten the four supplied screws.



Recommendation: Symmetricom recommends that all outdoor cable connections, or those connections exposed to wet or humid environments, be protected to prevent moisture condensation from entering the connectors. Wrap the antenna-to-cable connection with a self-fusing insulating tape (for example, 3M Scotch™ 23 Rubber Splicing Tape). Follow industry standards for connecting and sealing exposed cable connectors.

If you are using the mounting base, continue to step 3.

3. Attach the antenna to the mounting base by tightening the four pan-head screws into the antenna. Do not over-tighten.



Note: The gasket creates a very tight seal between the antenna and the mounting base. Consequently, extra pressure may be required to disassemble the antenna from the mounting base. Carefully use a flat-blade screwdriver as a wedge when disassembly is required.

4. Attach the antenna to the mast by sliding the antenna assembly over the mast until the mast rests against the gasket at the top of the mounting base.
5. Tighten the two set screws in the mount against the mast so the antenna assembly is securely held in place on the mast.

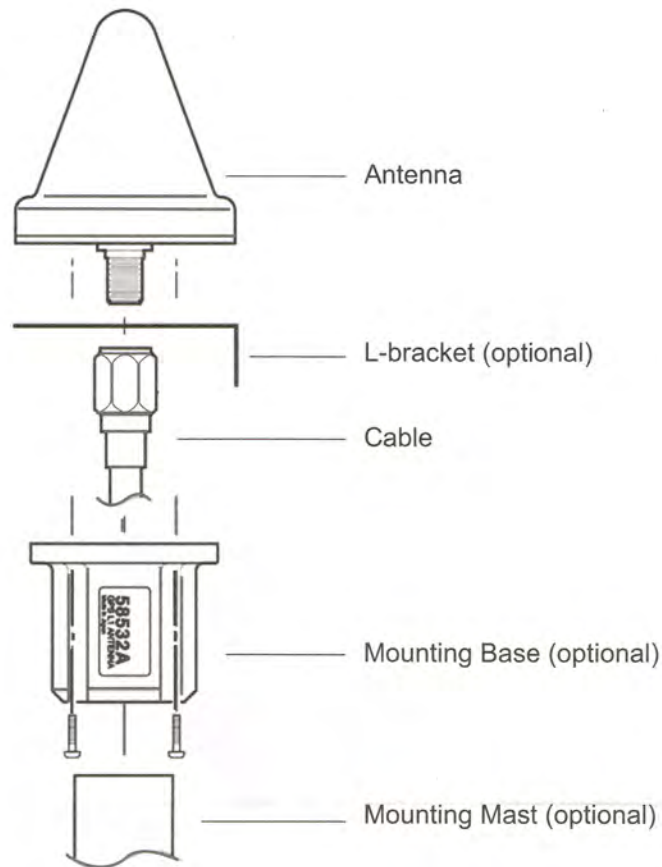


Figure 3 Antenna Assembly

Maintenance

The only periodic maintenance recommended for the antenna is to keep it clean and free of debris. The best cleaner is soap and water. Do not use abrasive compounds or chemical cleaners..



Recommendation: Symmetricom recommends that you periodically check all components of the antenna system that are exposed to weather, Replace them if necessary.

Technical Data

Table 1 lists the 58532A GPS L1 Reference Antenna technical characteristics.

Table 1. 58532A Technical Characteristics

Characteristic	Specification
Electrical Characteristics¹	
Frequency range (3 dB bandwidth)	1575.42 MHz
Polarization	Right-hand circular
Impedance	50 Ω (typical)
Total gain	> 30 dBi (38 dBi typical at elevation angle 90°)
Out-of-band signal attenuation	60 dB (typical) at 1575.42 MHz \pm 50 MHz
Noise figure	< 2.2 dB (1.8 dB typical)
VSWR	< 2.5 (1.5 typical)
DC Power	
Operating voltage	5 VDC \pm 0.5 VDC
Operating current	<27 mA (20 mA typical)
Physical Characteristics	
Dimensions	
Antenna without Mounting Base	90 mm diameter x 140 mm height (includes connector)
Mounting Base	43 mm I.D., 75 mm O.D., 65 mm height
Mounting Mast (Option AUB)	39 mm I.D., 42 mm O.D., 355 mm height
Weight	
Antenna w/o Mounting Base	187 g
Mounting Base	240 g
Mounting Mast (Option AUB)	250 g
Operating Temperature	-40° C to +85° C
Storage Temperature	-45° C to +90° C
Output Connector	Type-N Jack

Note:

¹All values are defined at 25° C \pm 15° C unless otherwise noted.

Antenna Characteristics vs. Frequency Response

Figure 4 shows the relative amplitude vs. frequency response for the antenna as measured with a network analyzer. Note the steep roll-off characteristics of the filtering.

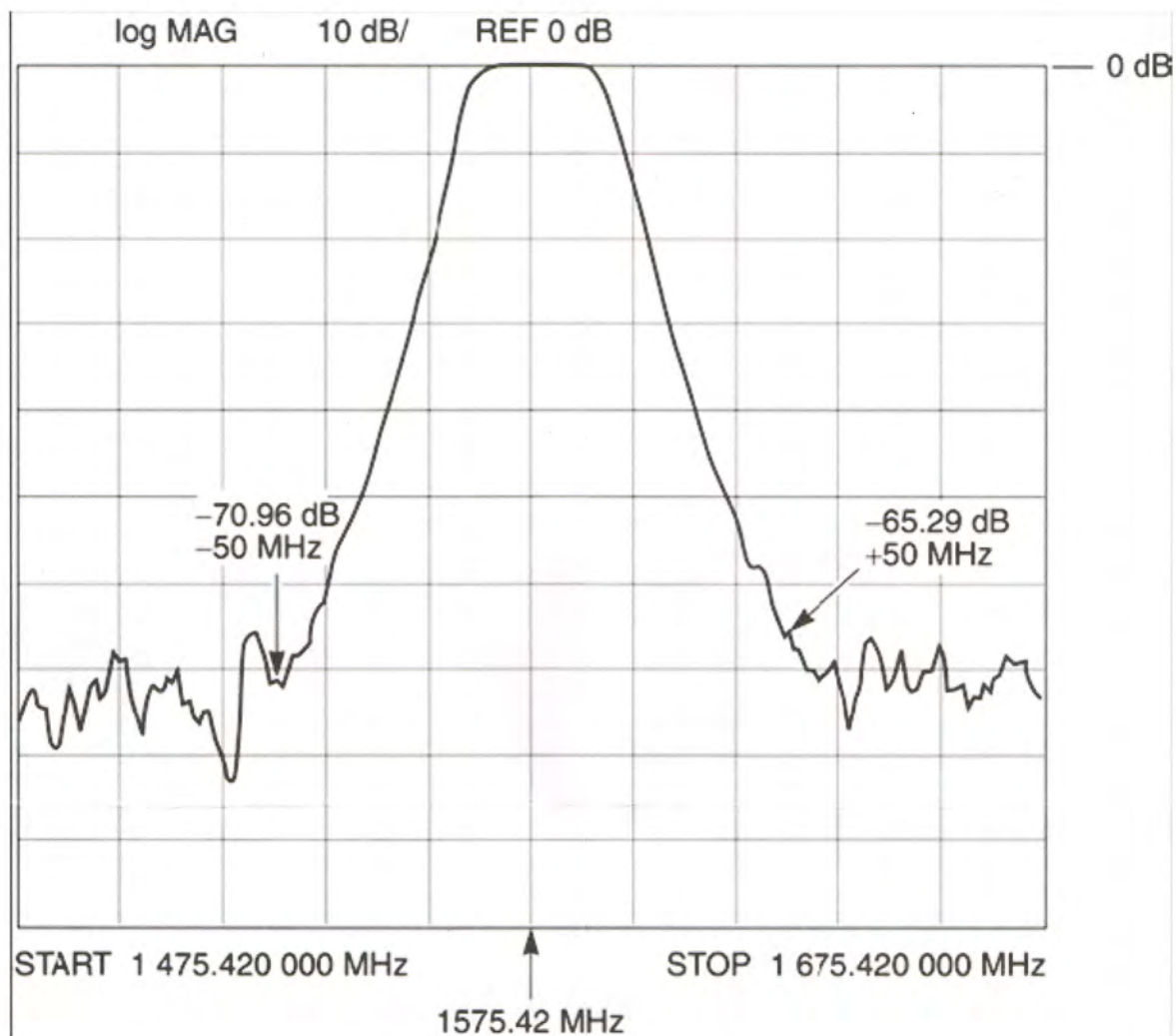


Figure 4 Amplitude vs. Frequency for the 58532A GPS L1 Reference Antenna

Material Disclosure Table

Table 2 lists the toxic or hazardous substances and elements in the 58532A antenna assembly, and Figure 5 is the Supplement to Product Instructions..

Table 2. Material Disclosure Table

Part Name	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr (VI))	Polybrominated Biphenyls (PBB)	Polybrominated diphenyl ethers (PBDB)
Radome	0	0	0	0	0	0
Housing	X	0	0	0	0	0
Connector	X	0	0	0	0	0
Label	0	0	0	0	0	0
Mounting	X	0	0	0	0	0
Screw	0	0	0	0	0	0
Printed circuit board block	X	0	0	0	0	0
Antenna block	X	0	0	0	0	0

0: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of SJ/T11363-2006.

X: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is above the limit requirement of SJ/T11363-2006.

产品说明书附件

SUPPLEMENT TO PRODUCT INSTRUCTIONS


这个文件涉及的是在中华人民共和国境内进口或销售的电子信息产品
**Include this document with all Electronic Information Products
 imported or sold in the People's Republic of China**

部件名称 (Parts)	有毒有害物质或元素 (Hazardous Substance)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr ⁶⁺)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
天线保护罩 (Radome)	0	0	0	0	0	0
护罩底盘 (Housing)	x	0	0	0	0	0
连接器 (Connector)	x	0	0	0	0	0
标签 (Label)	0	0	0	0	0	0
天线支架 (Mounting)	x	0	0	0	0	0
螺丝 (Screw)	0	0	0	0	0	0
印刷电路板 (Printed Circuit Board Block)	x	0	0	0	0	0
天线模块 (Antenna Block)	x	0	0	0	0	0

0: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T11364-2006 标准规定的限量要求以下。
 Indicates that the concentration of the hazardous substance in all homogeneous materials in the parts is below the relevant threshold of the SJ/T11364-2006 standard.

x: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11364-2006 标准规定的限量要求。
 Indicates that the concentration of the hazardous substance of at least one of all homogeneous materials in the parts is above the relevant threshold of the SJ/T 11364-2006 standard.

除非另外特别的标注, 此标志为针对所涉及产品的环保使用期标志. 某些零部件会有一个不同的环保使用期(例如, 电池单元模块)贴在其产品上.
 此环保使用期限只适用于产品是在产品手册中所规定的条件下工作.
 The Environmentally Friendly Use Period (EFUP) for all enclosed products and their parts are per the symbol shown here, unless otherwise marked. Certain parts may have a different EFUP (for example, battery modules) and so are marked to reflect such. The Environmentally Friendly Use Period is valid only when the product is operated under the conditions defined in the product manual.



SJ/T11364-2006 – August 2007

Figure 5 Supplement to Product Instructions

Contacting Technical Support

If you encounter any difficulties installing or using the product, contact Symmetricom Global Services:

U.S.A. Call Center

Symmetricom, Inc.
2300 Orchard Parkway
San Jose, CA 95131-1017

Toll-free in North America: 888-367-7966

Telephone: 408-428-7907

Fax: 408-428-7998

E-mail: support@symmetricom.com

Internet: <http://www.symmetricom.com>

Europe, Middle East, and Africa (EAME) Call Center:

Symmetricom Global Services EMEA
Fichtenstr. 25
85649 Hofolding Germany

Telephone: +49 700 3288 6435

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E-mail: emeasupport@symmetricom.com

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Contacting Technical Support