

REVISIONS				
Rev	ECN	Description	Date	Approved
A	C25742	Release to Production	3/12/08	D.C.



(V3 TMA) Trimble Miniature Antenna Specification RoHS compliant.

Approvals	Date
DRAWN: A. Perez	3/12/08
CHECKED	
ISSUED	

Sheet	Size	Drawing Number	Revision
1 of 5	A	66800-52-SP	A

TRIMBLE NAVIGATION
MINIATURE ANTENNA
GPS ANTENNA WITH LOW NOISE AMPLIFIER

Part Number 66800-52

Part Number 66800-52-SP

Copyright © 1995
Trimble Navigation Limited
935 Stewart Drive
Sunnyvale, CA 94085, USA

All rights reserved

SPECIFICATION FOR GPS ANTENNA WITH LOW NOISE AMPLIFIER

1.0 APPLICATION

THIS SPECIFICATION DESCRIBES THE ELECTRICAL AND MECHANICAL CONDITIONS OF THE TRIMBLE MINIATURE ANTENNA, P/N 66800-52.

2.0 SYSTEM

THIS ANTENNA SYSTEM CONSISTS OF TWO FUNCTIONAL BLOCKS LISTED BELOW.

2.1 ANTENNA ELEMENT

2.2 LNA

3.0 GENERAL

3.1 ENVIRONMENTAL CONDITIONS

3.1.1	OPERATING TEMPERATURE	-40°C TO +85°C
3.1.2	STORAGE TEMPERATURE	-40°C TO +100°C (110°C MAX 1HR.)
3.1.3	RELATIVE HUMIDITY	20% TO 95%

3.2 ELECTRICAL SPECIFICATIONS

3.2.1	INPUT VOLTAGE	3.0V±0.3V
3.2.2	POWER CONSUMPTION	15mA TYPICAL (+25°C± 5 °C) 20mA MAX (-40°C~+85°C)
3.2.3	OUTPUT CONNECTOR	SMA-SP-1.5DQEHV
3.2.4	CABLE	1.5DS-QEHV (TA) 5m:BLACK

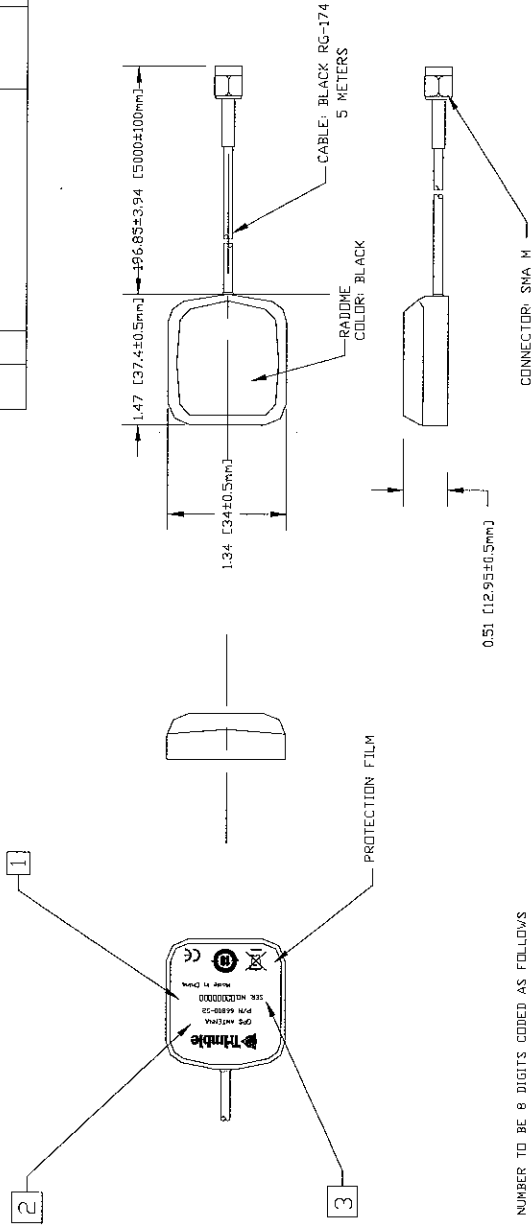
3.3 MECHANICAL SPECIFICATIONS

3.3.1	MOUNTING	MAGNET MOUNT
3.3.2	PULLING FORCE OF MAGNET	29.4N Min.
3.3.3	WATER PROOF	WATER PROOF (JISD0203 S2)
3.3.4	SHOCK	50G : VERTICAL AXIS 30G : ALL AXIS
3.3.5	VIBRATION	10 ~ 200Hz. LOG SWEEP 3.0G (SWEEP TIME : 15 MIN.) 3 AXIS
3.3.6	MAGNET MOUNT WITHSTAND	WITHSTAND UP TO SPEED OF 180Km/h.
3.3.7	CABLE PULLING FORCE	49N MIN. Visible or electrical damage must not appear when applying up to 49N pulling force between cable and antenna as well as between cable and connector.
3.3.8	BENDING TEST	AFTER BENDING TEST 90° DEGREE RIGHT AND LEFT x 1,000 CYCLES, NO PERMANENT DAMAGE FOUND.
3.3.9	ANTI-COROSION	BASED ON JIS Z 2371, SPRAY 5% SALT WATER 35°C SHOULD NOT RUST AFTER 96Hrs,
3.3.10	CONFIGURATION AND DIMENSION	SEE MECHANICAL DRAWING
3.3.11	WEIGHT	25g WITHOUT CABLE

SPECIFICATION FOR GPS ANTENNA WITH LOW NOISE AMPLIFIER

4.0	ANTENNA	
4.1	FREQUENCY RANGE	1,575.42±1.023MHz
4.2	GAIN	90° : 3.0dBi MIN. 20° : -5.0dBi MIN. (MOUNTED ON THE 65mm X 65mm SQUARE GROUND PLANE)
4.3	POLARIZATION	RHCP
4.4	AXIAL RATIO	90° : 4.0dB MAX. 10° : 6.0dB MAX. (MOUNTED ON THE 65mm X 65mm SQUARE GROUND PLANE)
5.0	LNA	
5.1	FREQUENCY RANGE	1,575.42 ± 1.023MHz
5.2	GAIN	28 ± 3dB (-40°C~+85°C)
5.3	NOISE FIGURE	1.5dB MAX. (+25°C± 5°C) 2.2dB MAX. (+85°C)
5.4	OUT OF BAND REJECTION	$f_o=1,575.42\text{MHz}$ $f_o \pm 20\text{MHz}$ 7dB MIN. $f_o \pm 30\text{MHz}$ 12dB MIN. $f_o \pm 50\text{MHz}$ 20dB MIN. $f_o \pm 100\text{MHz}$ 30dB MIN.
5.5	OUTPUT IMPEDANCE	50Ω
5.6	OUTPUT VSWR	2.0MAX
5.7	OSCILLATION	NO OSCILLATION MUST BE FOUND IN BAND AND OUT BAND. (IN YOKOWO STANDARD MEASUREMENT).
5.8	ESD	ANTENNA SURFACE ± 15KV CONNECTOR PIN ± 8KV (TEST CONDITION JASOD001-94 C-3)
6.0	OVERALL SPECIFICATIONS (THROUGH ANTENNA, LNA, CABLE AND CONNECTOR)	
6.1	FREQUENCY RANGE	1,575.42+/-1.023MHz
6.2	GAIN	27 ± 3dBi (+25°C~ ± 5°C) 27 ± 4dBi (-40°C~ ± 85°C) (MOUNTED ON THE 65mm x 65mm SQUARE GROUND PLANE)
6.3	OUTPUT IMPEDANCE	50Ω
6.4	VSWR	2.0MAX.
7.0	MTBF	5.0E+6Hr
8.0	RECOMMENDED STORAGE CONDITION	STORE IN ROOM CONDITION AS LISTED BELOW: TEMPERATURE -20°C~+45°C, HUMIDITY 80% MAX.
9.0	EXTERNAL APPEARANCE	NO STAIN OR FLAW MUST BE FOUND.
10	DATA	GAIN (AT 3.0V ± 0.2V f=1575MHz) AND POWER CONSUMPTION AT ROOM TEMPERATURE.

REVISIONS			
ECN	REV	DATE	APPROVED
000744	A	3/12/08	DC



3 SERIAL NUMBER TO BE 8 DIGITS CODED AS FOLLOWS

XX Y Z WWWW
 WHERE: XX = DATE (DAY) OF THE MONTH
 Y = NUMBER OF THE MONTH 1-9 OCT=0, NOV=N, DEC=D
 Z = YEAR (i.e. 1996 = 6
 WWW=ORDINAL NUMBER OF THE UNIT PRODUCED ON THAT DAY
 (i.e. 0001 thru 9999)

2 PRINTING TO BE BLACK POSITIVE, UV PROTECTION, HELVETICA BOLD CONDENSED

1 LABEL TO BE 50 MICRON THK SILVER MAT ON POLYESTER FILM WITH PERMANENT ADHESIVE

NOTES:

CONTRACT NO.		DATE	
MATERIAL		3/12/08	
FINISH		DC	
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED TOLERANCE		SIZE	
		FSC# NO.	
		66800-52-AD	
		DRAWING NO.	
		66800-52-AD	
		REV	
		A	
		SHEET 1 OF 1	
		SCALE	
		NONE	
		FILE: 66800-52-AD	



GPS ANTENNA 3V 5M SMA

Trimble Navigation Limited
 Proprietary & Confidential