

**REVISIONS**

Rev	ECN	Description	Date	Approved
1		Pre-release to production	4-7-06	M. Sojka



Approvals	Date	<b>Bullet III – 3V TNC</b>		
DRAWN		<b>RoHS Compliant Trimble Specification</b>		
CHECKED		Sheet	Size	Drawing Number
ISSUED		1 of 6	A	<b>57861-00-SP</b>
				Revision <b>1</b>

TRIMBLE NAVIGATION LIMITED  
BULLET ANTENNA  
GPS ANTENNA WITH LOW NOISE AMPLIFIER  
RoHS COMPLIANT

**Part Number 57861-00**

Part Number 57861-00-SP

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935 Stewart Drive  
Sunnyvale, CA 94085

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**SPECIFICATION FOR GPS ANTENNA WITH LOW NOISE AMPLIFIER  
RoHS COMPLIANT**

**1.0 APPLICATION**  
THIS SPECIFICATION DESCRIBES THE ELECTRICAL AND MECHANICAL CONDITIONS OF THE TRIMBLE BULLET ANTENNA, P/N 57861-00.

**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
  - 3.1.3 RELATIVE HUMIDITY      20% TO 95%
  
- 3.2 ELECTRICAL SPECIFICATIONS**
  - 3.2.1 INPUT VOLTAGE      3.3V +/- 0.3V
  - 3.2.2 POWER CONSUMPTION      20mA MAX.
  - 3.2.3 OUTPUT CONNECTOR      TNC (FEMALE)
  
- 3.3 MECHANICAL SPECIFICATIONS**
  - 3.3.1 MOUNTING      NUT MOUNT
  - 3.3.2 WATER PROOF      WATER PROOF (JIS D0203 S2)
  - 3.3.3 SHOCK      50G : VERTICAL AXIS  
30G : ALL AXIS
  - 3.3.4 VIBRATION      10 ~ 200Hz. LOG. SWEEP 3.0G  
(SWEEP TIME : 15 MIN.), 3 AXIS
  - 3.3.5 ANTI-COROSION      BASED ON JIS Z 2371, SPRAY 5%  
SALT WATER 35°C SHOULD NOT  
RUST AFTER 96Hrs.
  - 3.3.6 CONFIGURATION AND  
DIMENSION      SEE MECHANICAL DRAWING
  - 3.3.7 WEIGHT      170g MAX.

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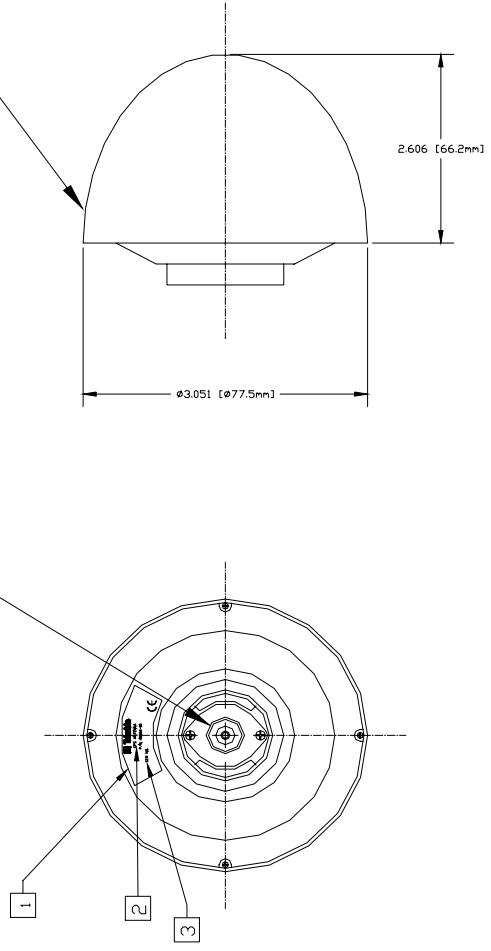
4.0	ANTENNA	
4.1	FREQUENCY RANGE	1,575.42 ± 1.023MHz
4.2	GAIN	90° : 3.0dBi MIN. 20° : -5.0dBi MIN.
4.3	POLARIZATION	RHCP
4.4	AXIAL RATIO	90° : 4.0dB MAX. 10° : 6.0dB MAX.
5.0	LNA	
5.1	FREQUENCY RANGE	1,575.42 ± 1.023MHz
5.2	GAIN	28 ± 3dB MAX. (+25°C ± 5°C)
5.3	NOISE FIGURE	3.3dB MAX. (+25°C ± 5°C) 3.8dB MAX. (+85°C)
5.4	OUT OF BAND REJECTION	$f_0=1,575.42\text{MHz}$ $f_0\pm 20\text{MHz}$ 7dB MIN. $f_0\pm 30\text{MHz}$ 12dB MIN. $f_0\pm 50\text{MHz}$ 20dB MIN. $f_0\pm 100\text{MHz}$ 30dB MIN.
5.5	OUTPUT IMPEDANCE	50Ω
5.6	OUTPUT VSWR	2.0 MAX.
6.0	OVERALL SPECIFICATIONS (THROUGH ANTENNA, LNA, CABLE AND CONNECTOR)	
6.1	FREQUENCY RANGE	1,575.42 ± 1.023MHz
6.2	GAIN	30 dBi MIN. (+25°C ± 5°C) 27 dBi MIN. (-30°C ~ +85°C)
6.3	OUTPUT IMPEDANCE	50Ω
6.4	VSWR	2.0 MAX.
6.5	OSCILLATION	NO OSCILLATION MUST BE FOUND IN BAND AND OUTBAND.
7.0	MTBF	TBD
8.0	RECOMMENDED STORAGE CONDITION AND STORAGE TERM	STORE IN ROOM CONDITION AS LISTED BELOW: TEMPERATURE -20°C~+45°C, HUMIDITY 80% MAX.
9.0	RELIABILITY TEST	TBD
10.0	EXTERNAL APPEARANCE	NO STAIN OR FLAW MUST BE FOUND.

11.0	CONNECTOR SPEC	
11.1	IMPEDANCE	50 ohm
11.2	FREQUENCY RANGE	0-2 GHz
11.3	WORKING VOLTAGE	500Volt rms
11.4	DIELECTRIC WITHSTANDING VOLTAGE	1500Volt rms
11.5	VSWR	1.3MAX 0-2GHz
11.6	CONTACT RESISTANCE	CENTER CONTACT 1.5 milliohm OUTRER CONTACT 0.2 milliohm
11.7	INSULATION RESISTANCE	5000 megohms (min)
12.0	DATA	GAIN (AT $3.3V \pm 0.3V$ $f=1575MHz$ ) AND POWER CONSUMPTION AT ROOM TEMPERATURE.

REVISIONS		
EN	REV	DESCRIPTION
	000000-01	RELEASE TO PRODUCTION
		APPROVED
		DATE
		1-24-03
		A. PEREZ

HALF ELLIPSE  
 MAJOR DIA. 3.937 [100mm]  
 MINOR DIA. 3.032 [77mm]

TNC CONNECTOR



- 1 LABEL TO BE 50 MICRON THK SILVER MAT ON POLYESTER FILM WITH PERMANENT ADHESIVE
  - 2 PRINTING TO BE BLACK POSITIVE, UV PROTECTION, HELVETICA BOLD CONDENSED
  - 3 SERIAL NUMBER TO BE 8 DIGITS CODED AS FOLLOWS  
 XX Y Z W/V/W/W
- 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  
 W/V/W=ORDINAL NUMBER OF THE UNIT PRODUCED ON THAT DAY  
 ( i.e 0001 thru 9999)

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DESIGNER	CHECKED	DATE	APPROVALS	DATE
			BRUNO A. PEREZ	3-15-00
			THOMAS FARUQ PALLA	

REV	APP	DATE	DESCRIPTION
000000-01			RELEASE TO PRODUCTION

ITEM	SCALE	UNIT
GPS ANTENNA BULLET III TNC	1:1	INCHES

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