

REVISIONS

Rev	ECN	Description	Date	Approved
A	5212	Initial Release	2/11/96	F. Palla



TMA Trimble Miniature Antenna Specification

Approvals	Date			
DRAWN				
CHECKED		Sheet	Size	Drawing Number
ISSUED		1 of 4	A	28367-XX-SP
				Revision
				A

TRIMBLE NAVIGATION
TMA TRIMBLE MINIATURE ANTENNA SPECIFICATION
GPS ANTENNA WITH LOW NOISE AMPLIFIER

Part Number 28367-XX

Part Number 28367-XX-SP

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Sunnyvale, CA 94088

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SPECIFICATION FOR GPS ANTENNA WITH LOW NOISE AMPLIFIER

1.0 APPLICATION

THIS SPECIFICATION DESCRIBES THE ELECTRICAL AND MECHANICAL PERFORMANCE OF THE TRIMBLE MINIATURE ANTENNA, PN 28367-00.

2.0 SYSTEM

THIS ANTENNA SYSTEM CONSISTS OF TWO FUNCTIONAL BLOCKS LISTED BELOW.

2.1 ANTENNA ELEMENT

2.2 LNA

SEE FIG. 2.1

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 4.75V±0.5V

3.2.2 POWER CONSUMPTION 30mA MAX.

3.2.3 OUTPUT CONNECTOR SMB

3.2.4 CABLE 1.5DS-QEHV (SHIKOKU CABLE CO., LTD.) 5m: BLACK

3.3 MECHANICAL SPECIFICATIONS

3.3.1 MOUNTING MAGNET MOUNT

3.3.2 PULLING FORCE OF MAGNET 3.0kgf MIN

3.3.3 WATERPROOF IMMERSION TO 1 METER WATER FOR 24 HOURS

3.3.4 SHOCK 50G: VERTICAL AXES

30G: ALL AXES

3.3.5 VIBRATION 10~200Hz. LOG.SWEEP 3. OG (SWEEP TIME: 15 MIN.), 3AXIS

500m/s² MAX ACCELERATION

3.3.6 MAGNET MOUNT 5kgf MAX

3.3.7 CABLE PULLING FORCE 90° DEGREES AT 1,000 CYCLES.

3.3.8 BENDING TOLERANCE SEE ATTACHED FIGURE

3.3.9 CONFIGURATION AND DIMENSION

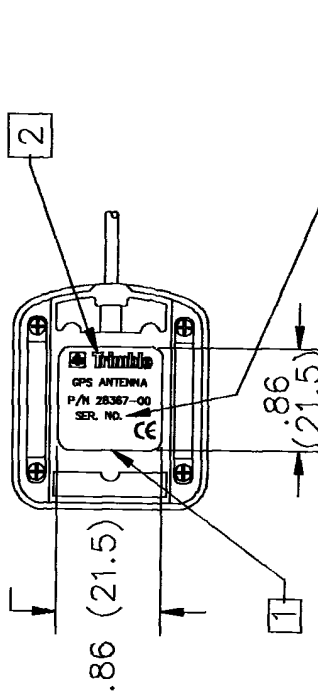
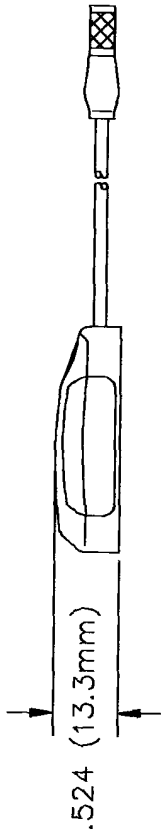
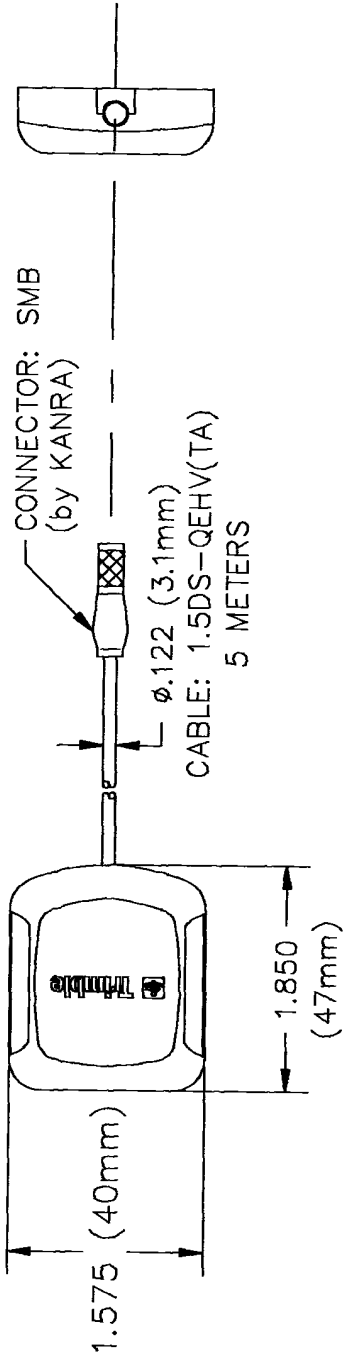
3.3.10 WEIGHT 180g MAX

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	27dB MIN.
5.3	NOISE FIGURE	1.5dB MAX. (+25°C+/-5°C) 2.1dB MAX. (+80°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.
6.0	OVERALL SPECIFICATIONS (THROUGH ANTENNA, LNA, CABLE AND CONNECTOR)	
6.1	FREQUENCY RANGE	1,575,42+/-1.023MHz
6.2	GAIN	23dBi MIN. (MOUNTED ON THE 65mm X 65mm SQUARE GROUND PLANE -30°C~+80°C)
6.3	NOISE FIGURE	1.6dB MAX. (+23°C) 2.3dB MAX. (+80°C)
6.4	OUTPUT IMPEDANCE	50Ω
6.5	OUTPUT VSWR	2.0 MAX
7.0	MTBF	1,488,095Hr.
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.

REVISIONS

ECN	REV	DESCRIPTION	DATE	APPROVED
5212	A1	RELEASE TO PROD.		
5467	B	ADDED NOTE #3	8-20	GCT



- 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:

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
 WWWW=ORDINAL NUMBER OF THE UNIT PRODUCED ON THAT DAY
 (i.e 0001 thru 9999)

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES (MILLIMETERS)		CONTRACT NO.	
TOLERANCE		APPROVALS	DATE
0 - 6mm	+/- .2mm	FARUQ PALLA	10/2/95
6 - 30mm	+/- .5mm	CHECKED	
30 - 120mm	+/- .8mm	DESIGNED	
MATERIAL		SCALE	NONE
FINISH		SIZE	B
DO NOT SCALE DRAWING		DWG NO.	28367-00-AD
		REV	B
		SHEET 1 OF 1	



GPS ANTENNA