

| REVISIONS | | | | |
|-----------|-------|-----------------------|----------|----------|
| Rev | ECN | Description | Date | Approved |
| A | XXXXX | Release to production | 12-19-05 | V. Skold |
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|----------------------|----------|---|------|--------------------|----------|
| Approvals | Date | Trimble Miniature Antenna Specification | | | |
| DRAWN: Armando Perez | 12-19-05 | | | | |
| CHECKED | | Sheet | Size | Drawing Number | Revision |
| ISSUED | | 1 of 5 | A | 57859-00-SP | A |

TRIMBLE NAVIGATION
MINIATURE ANTENNA
GPS ANTENNA WITH LOW NOISE AMPLIFIER

Part Number 57859-00

Document Number 57859-00-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 CONDITIONS OF THE TRIMBLE MINIATURE ANTENNA, P/N 57859-00.

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 3.0V ± 0.3V

3.2.2 POWER CONSUMPTION 5~13mA (-40°C~+85°C)

3.2.3 OUTPUT CONNECTOR HFL

3.2.4 CABLE 0.8D 85mm: BLACK

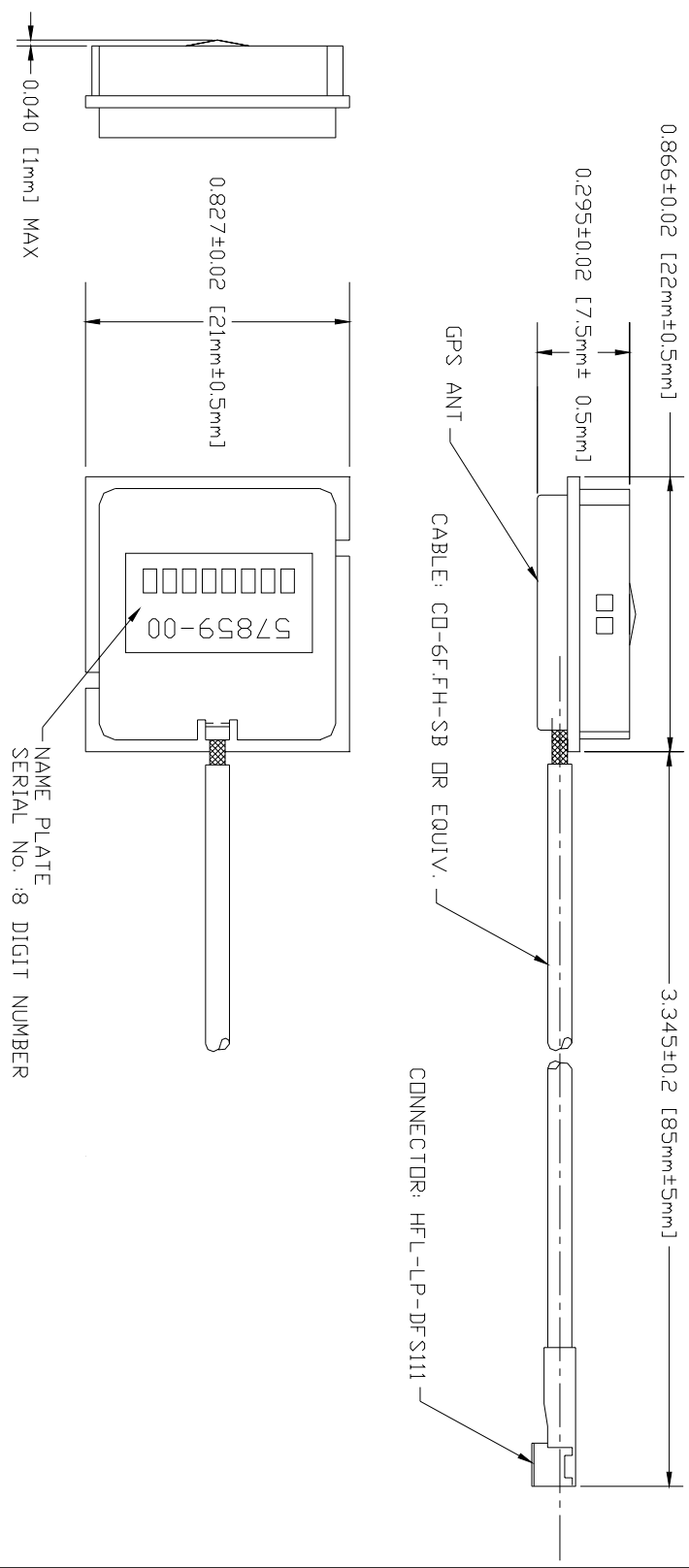
3.3 MECHANICAL SPECIFICATIONS

3.3.1 CONFIGURATION AND DIMENSION SEE ATTACHED FIGURE

3.3.2 WEIGHT 20g TYP

| SPECIFICATION FOR GPS ANTENNA WITH LOW NOISE AMPLIFIER | | |
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| 4.0 | ANTENNA | |
| 4.1 | FREQUENCY RANGE | 1,575.42±1.023MHz |
| 4.2 | GAIN | 90° : 3.0dBi MIN. 10° : -5.0dBi MIN. (MOUNTED ON THE 60mm X 60mm SQUARE GROUND PLANE) |
| 4.3 | POLARIZATION | RHCP |
| 4.4 | AXIAL RATIO | 90° : 4.0dB MAX. 10° : 6.0dB MAX. (MOUNTED ON THE 60mm X 60mm SQUARE GROUND PLANE) |
| 5.0 | LNA | |
| 5.1 | FREQUENCY RANGE | 1,575.42±1.023MHz |
| 5.2 | GAIN | 24 ±3 dB (-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. |
| 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 60mm x 60mm 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 | RELIABILITY TEST | TBD |
| 10.0 | EXTERNAL APPEARANCE | NO STAIN OR FLAW MUST BE FOUND. |
| 11.0 | DATA | GAIN (AT 3.0V ± 0.2V $f=1575\text{MHz}$) AND POWER CONSUMPTION AT ROOM TEMPERATURE. |

| REVISIONS | | | | |
|-----------|-----|-----------------------|----------|----------|
| EN | REV | DESCRIPTION | DATE | APPROVAL |
| XXXXX | A | RELEASE TO PRODUCTION | 12-19-05 | A. PEREZ |
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| TRIMBLE UNPACKAGED MINI 3.0 VOLT ANTENNA | | CONTRACT NO. APPROVALS DATE SIZE / FCST DWG. NO. SHEET 1 OF 1 |
| PART NO. 57859-00-AD | REV. A | DATE 12-19-05 |
| DRAWN BY A. PEREZ | CHECKED BY VICTOR SKOLD | APPLICATION USED IN DO NOT SCALE DRAWING |
| MATERIAL FINISH DIMENSIONS 0 - 6mm +/- 2mm 6 - 30mm +/- 2mm 30 - 150mm +/- 5mm | | |