

REVISIONS				
Rev	ECN	Description	Date	Approved
A	C257422	Release to Production	3/12/08	D.C.
B	C42398	Revised cable spec.	9/29/10	D.C.
C	C42977	Added revision control	10/25/10	D.C.



(V3 TMA) Trimble Miniature Antenna Specification RoHS compliant.

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

CHECKED		Sheet	Size	Drawing Number	Revision
ISSUED		1 of 5	A	66800-50-SP	C

TRIMBLE NAVIGATION
MINIATURE ANTENNA
GPS ANTENNA WITH LOW NOISE AMPLIFIER

Part Number 66800-50

Part Number 66800-50-SP

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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 66800-50.

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

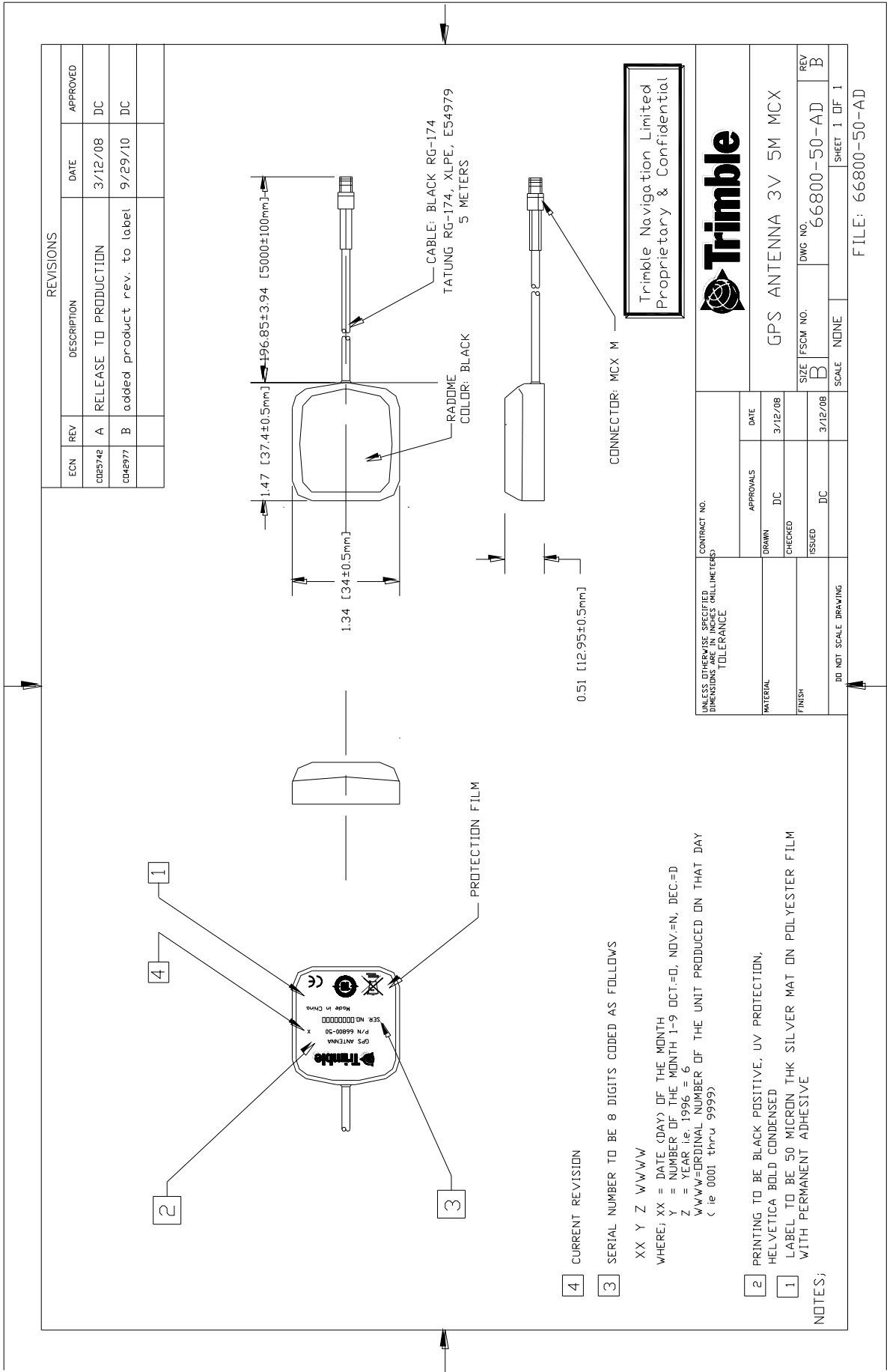
3.2.1	INPUT VOLTAGE	3.0V±0.3V
3.2.2	POWER CONSUMPTION	15mA TYPICAL (+25°C ± 5 °C) 20mA MAX (-40°C~+85°C)
3.2.3	OUTPUT CONNECTOR	MCX-Plug
3.2.4	CABLE	RG 174 5M:BLACK (halogen free) TATUNG RG-174, XLPE, E54979

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.



4 CURRENT REVISION

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)

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;