



PRODUCT SPECIFICATION

TITLE

LOW PROFILE GNSS CERAMIC ANTENNA

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A	EC No: 116780 DATE: 2017/05/25	LOW PROFILE GNSS CERAMIC ANTENNA PRODUCT SPECIFICATION	1 of 5
DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
PS-2042830001	Colin.Xu 2017/05/23	Stary.Song 2017/05/23	Welson Tan 2017/05/25



PRODUCT SPECIFICATION

LOW PROFILE GNSS CERAMIC ANTENNA

1.0 SCOPE

This Product Specification covers the mechanical, electrical and environmental performance requirements and test methods for Low Profile GNSS ceramic antenna.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER

Product name: Low profile GNSS ceramic antenna 2042830001

2.2 Design and Construction

Antenna shall be of the design, construction and physical dimensions specified on the applicable sales drawing.

2.3 Materials

a) Ceramic: Refer to sales drawing of 2042830001

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See drawings and other sections of this specification for the relevant reference documents. In cases where the specification differs from the drawings, the drawings take precedence.

4.0 RATINGS

4.1 RF POWER

2 Watts MAX

4.2 TEMPERATURE

Operating: - 40°C to + 125°C
Storage : - 40°C to + 125°C

4.3 HUMIDITY

Storage : 15~70% RH
Test : 80~95% RH

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5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

DESCRIPTION	Test Condition	Requirements		
Frequency Range	Measure antenna on recommended PCB through VNA E5071C	1561±5MHz	1575±5MHz	1602±5MHz
Return Loss	Measure antenna on recommended PCB through VNA E5071C	< -8 dB	< -10 dB	< -8 dB
Peak Gain (Max)	Measure antenna on recommended PCB through OTA chamber	1.5dBi	2.0dBi	1.6dBi
Avg. Total Efficiency	Measure antenna on recommended PCB through OTA chamber	>60%	>65%	>60%
Polarization	Measure antenna on recommended PCB through OTA chamber	Linear		
Input Impedance	Measure antenna on recommended PCB through VNA E5071C	50 Ohms		

5.2 MECHANICAL REQUIREMENTS

TEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.2.1	Ag Plating thickness measure	Use X-ray measure the thickness	Total thickness: 3-8um
5.2.2	Tape test	Attach the tape (3M610) on to the above without air bubble. Wait for 5 minutes, Release tape at fast speed.	Acceptance <10% peeling off.

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5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5.3.1	Humidity Test	1.Test condition: The device under test is kept for 12 hours in an environment with a temperature of 55 degrees and a relating humidity of 95%. Thereafter for 12 Hours in an environment with a temperature of 25 degrees and a relative humidity of 95%. The cycle is repeated until a total of 6 cycles have been completed. Hereafter the conditions are stabilized at room temperature.	1) Parts should meet RF spec before and after test. 2) No cosmetic problem
5.3.2	Temperature cycling test	1.Test condition: The device under test at -40 °C ⇌ 125 °C by 72 cycles, Dwell of 30 min, transition time between Dwell 15 sec (~ 61 min / cycle) and each item should be measured after exposing them in normal temperature and humidity for 24 h.	1) Parts should meet RF spec before and after test. 2) No cosmetic problem
5.3.3	Salt mist test	1.Test condition: The device under test is exposed to a spray of a 5% (by volume) resolution of NaCL in water for 2 hours. Thereafter the device under test is left for 1 week in room temperature at a relative humidity of 95%. The cycle is repeated until a total of 2 cycles have been completed. Here after the conditions are stabilized at room temperature.	1) Parts should meet RF spec before and after test. 2) No cosmetic problem
5.3.4	High Temperature	Test condition: 1) Temperature:125°C, time:1008hours 2) There is no substantial obstruction to air flow across and around the samples, and the samples are not touching each other	1) Parts should meet RF spec before and after test. 2) No cosmetic problem

The meaning of text “**No COSMETIC PROBLEM**” in the table above is:

- a. No bubble issue.
- b. No plating peeling off issue.
- c. No mechanical damage.

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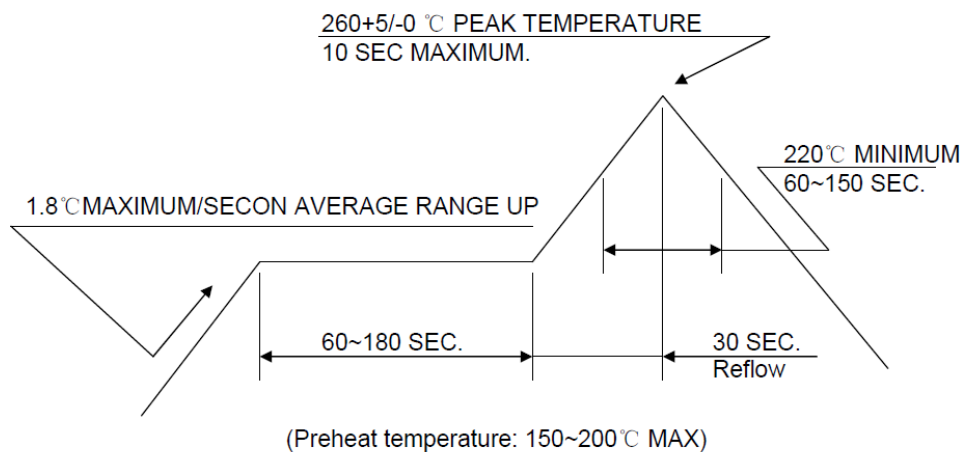
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6.0 TEST GROUPINGS

Note: All test specimens (except group1, 2,) shall pass the reflow process 3 times.

Test Item	Description	Group1	Group2	Group3	Group4	Group5	Group6
5.2.1	Plating thickness	X					
5.2.2	Tape test		X				
5.3.1	Humidity Test			X			
5.3.2	Temperature cycling test				X		
5.3.3	Salt mist test					X	
5.3.4	High Temperature						X
Sample Quantity		5	5	5	5	5	5

7.0 RECOMMENDED REFLOW CONDITION



8.0 PACKAGING

Refer to packaging drawing of 2042830001.

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