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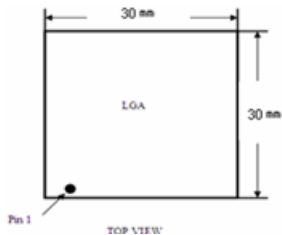
Thank you for purchasing HUAWEI MU509-b HSDPA Module (hereinafter referred to as the MU509)

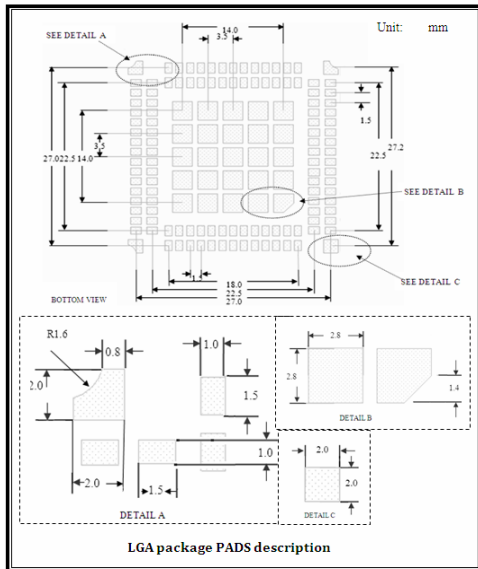
Note:

- This manual briefly describes the preparation, the process for PCB Design, Assembly and safety precautions.
- You are recommended to read the manual before using the MU509.

Getting to Know the MU509

The package of the LGA module is 116 pin LGA with a dimension of 30 mm × 30 mm × 2.5 mm and the pitch of 1.5 mm. It is applied to the user interface board, and can be used as a wireless terminal in a network environment.

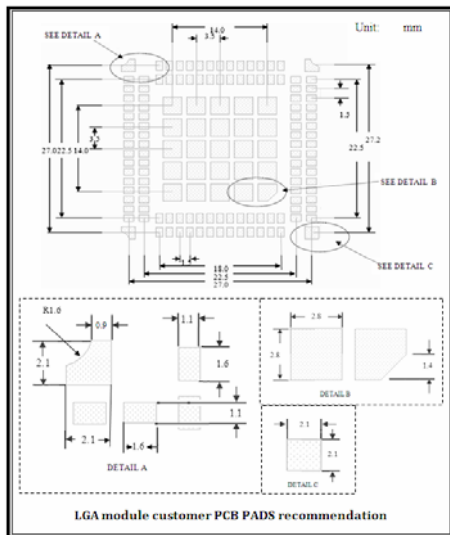




PCB Design

CB Pad Design

To achieve high efficiency of the production and solder joints of high reliability, it is recommended that the PCB pad size be designed as follows: the size of the middle region is the same as the pad size of the product package; other pads are 0.05 mm larger than the unilateral pad of the product package. For details, see the following figure:



Requirements on PCB Layout

- Other devices must be located more than 3 mm away from the LGA module. It is recommended to be 5 mm. The minimum distance between the LGA module and the PCB edge is 1.5 mm.
- When the PCB layout is double sided, it is recommended that the LGA module be placed on the second side for assembly.

Design of Solder Mask

The PCB pad design can be solder mask defined (SMD), or non-solder mask defined (NSMD).

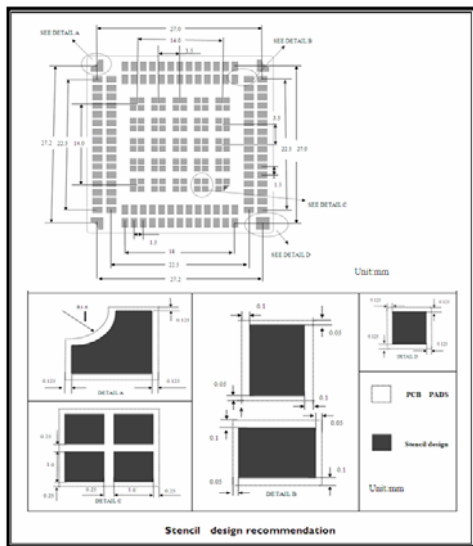
NSMD is recommended. In addition, the solder mask of the NSMD pad design is larger than the pad so the reliability of the solder joint can be improved.

The solder mask must be 100 μm to 150 μm larger than the pad, that is, the single side of the solder mask must be 50 μm to 75 μm larger than the pad. The specific size depends on the processing capability of the PCB manufacturer.

Assembly

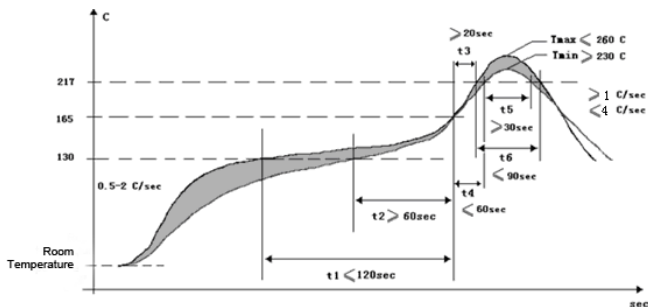
Stencil Design

It is recommended that the stencil for the LGA module be 0.12 mm in thickness. For the stencil design, see the following figure:



Reflow Profile

For the soldering temperature of the LGA module, see the following figure:



Reflow parameters:

| | | |
|----------------------------|---|------------------------------------|
| Preheat zone (40–150°C) | Time: 60 - 120sec | Heating rate: 0.5–2°C/sec |
| Soak zone (150–200°C) | Time: 60 - 120sec | Heating rate: <1.0°C/sec |
| Reflow zone (> 217°C) | Time: 30 - 90sec | Peak reflow temperature: 230–260°C |
| Cooling zone | Cooling rate: 1°C/sec ≤ Slope ≤ 4°C/sec | |