

Mounting Instructions



COM Express™

MSC CXC-PV525

Intel® Atom™ D525/N455



Mounting instructions for
Cooling Solutions

January, 2012

1 Introduction

This document is designed to give the customer a better understanding of what needs to be considered when using MSC cooling solutions on the CXC-PV525 module. Below you will find important guidelines that must be followed to ensure that the cooling solution is properly mounted.

1.1 General Information

Modern computers use very dense chip architectures that create a lot of heat in a relatively small area. To make sure that the parts are used within their specifications, it is necessary to provide a method to conduct the thermal energy away from these sensitive semiconductor dies. For this purpose MSC offers different cooling solutions.

1.2 The Difference between a Heat Sink and a Heat Spreader

A heat sink is able to remove the heat generated by the electrical power dissipated by a running computer. This is usually done by dissipating the heat into the environment. A heat spreader is just a means to conduct the heat to the heat sink, which then dissipates it. A heat spreader is not a heat sink!

Photo Heat Spreader: MSC CXC-PV525-01HSP-001



Photo floating Heatsink: MSC CXC-PV525-01 HSI-001



Photo Heatsink: MSC CXC-PV525-02 HSI-001



2 Mounting Instructions

Photo 1 shows the floating heat sink as delivered.

The two red rectangles show the thermal contact locations of the cooling solution. According to the amount of heat that has to be transferred, different materials have been chosen to achieve optimal thermal contact. The grey pads consist of a phase change material, which melts the first time it is heated. Due to the mechanical pressure between die and cooling solution, the residual material is pressed out of the gap; thus leaving behind only a very thin film with a very good thermal performance. Since these pads are printed on the aluminum, they are very soft and sensitive to scratches. **If the surface of the pad is damaged, use a clean knife or something similar and try to form it so that the die surfaces are completely covered.**

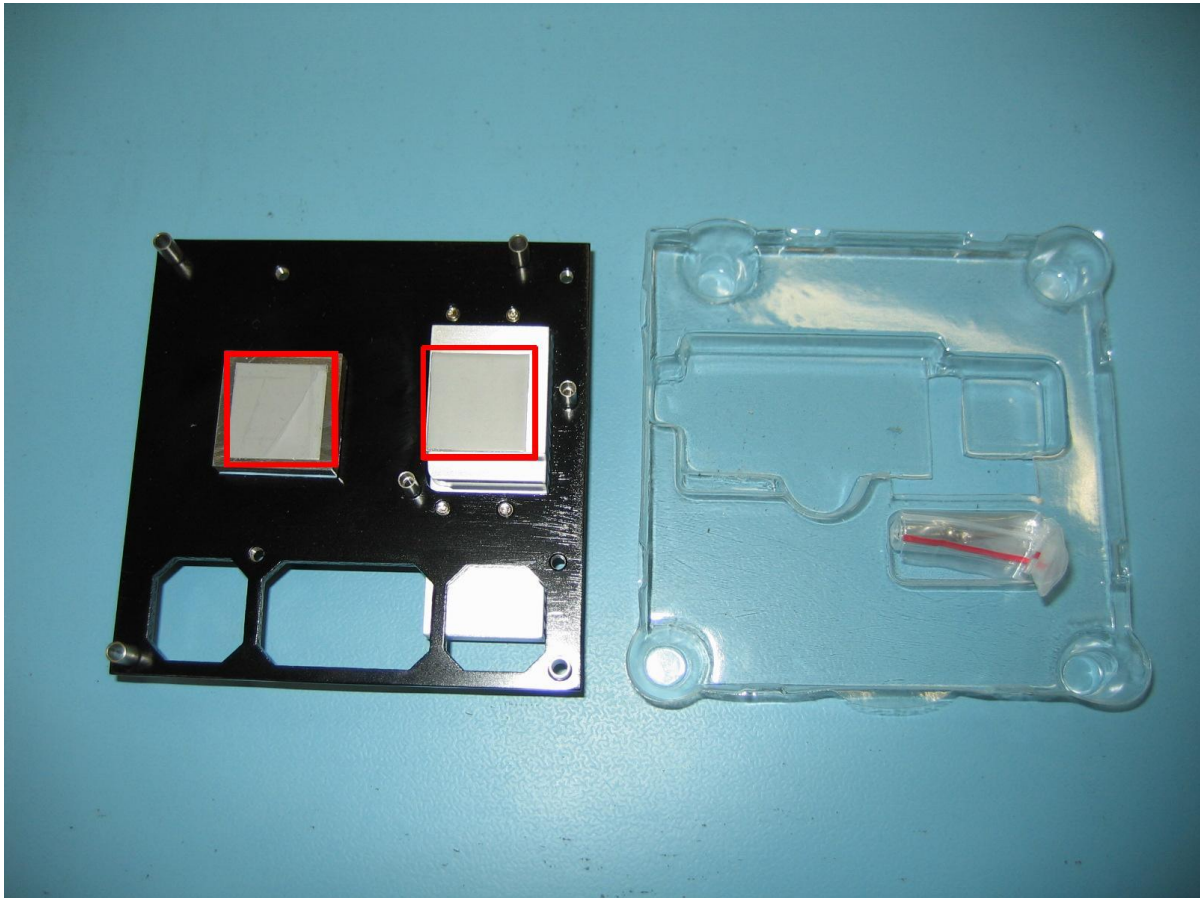
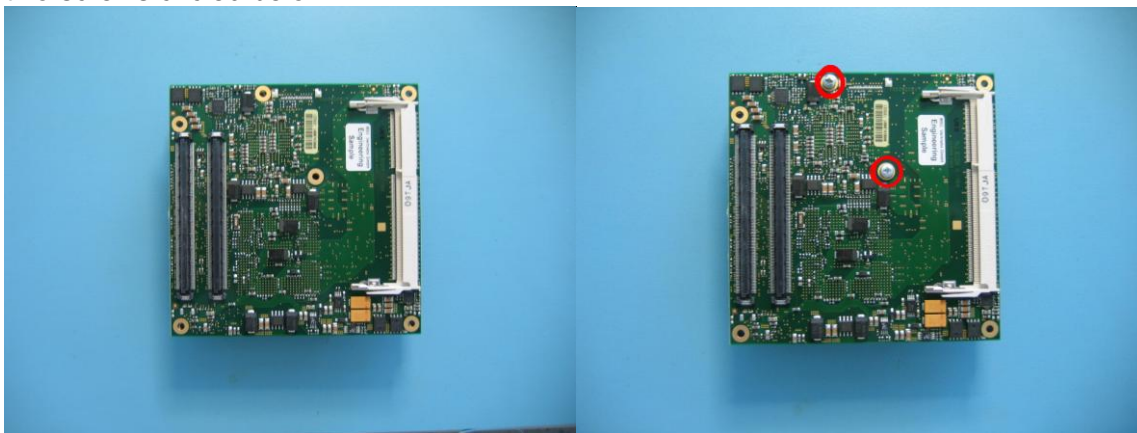


Photo 1

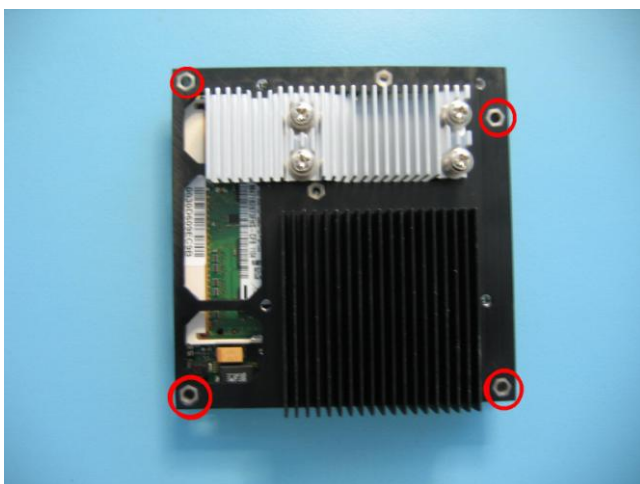
Step 1: Insert the memory module into the memory socket. Make sure it is inserted correctly!



Step 2: Place the printed circuit board onto the cooling solution and fix it by tightening the two screws circled below.



Step 3: Mount the CXC-PV525 module on the baseboard and fix it securely with four screws as shown below. (M2.5, lengths depends on customer's mechanical solution)



NOTE:

The grey heat conducting pads are intended for one-time mounting only. If you need to remove the cooling solution for service purposes and then reuse it, the wax-like material must be spread over the full die surface again before re-mounting the cooling solution (see above, paragraph 2).