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Application Note

AN000493

NanEye 2D Module

Handling Manual

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1 Introduction

This document presents instructions for the handling of the NanEye module in order to avoid damage to the sensor due to improper usage.

NanEye is a miniature sized image sensor for vision application where size is a critical factor. Its small size, along with its small wires, makes this product a very fragile piece that needs to be handled with care. This document has some explanations about how customers can fix some issues caused by the bad handling of NanEye and recommendations regarding its integration on custom systems.

The reference document for this manual is the NanEye / NanEye Stereo Datasheet.

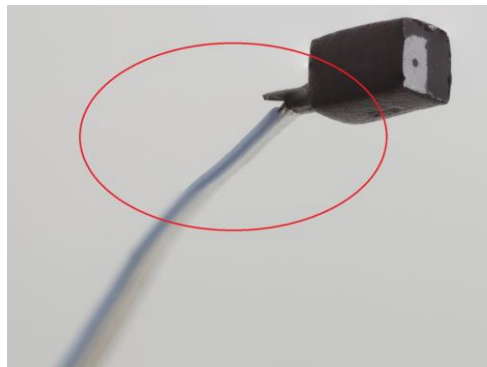
2 Using the Module

Due to the packaging characteristics of this product we recommend the customer not pull or hang the module, under the risk of detaching the cable from the sensor head.

NanEye can support a maximum force of 60 g for cable pulling and 300 g for cable shearing, according to performed tests. In case the cable is detached near the camera head zone, repair is not possible.

Removing or damaging the black paint of the sensor will deeply affect camera performance (e.g. creating artifacts, light leakage, etc) and must be avoided.

Figure 1:
NanEye's Critical Area



In case the cable is broken in any its other part (non critical area), please refer to section 3. The cable wires have a specific pinout guided by the colored wire (Ground (VSS)). Please be aware that swapping the pinout will cause the camera not to be operational and may cause irreversible damage to the module.

Figure 2:
NanEye's Pinout



It is also important to have special attention when connecting the modules to the evaluation boards. For that purpose, please follow correctly the respective NanEye Evaluation Kit manuals.

For demo purposes and easy handling we recommend the NanEye Fiber Optic Demo Kit (including NanEye integration with fiber optics for illumination).

**Attention**

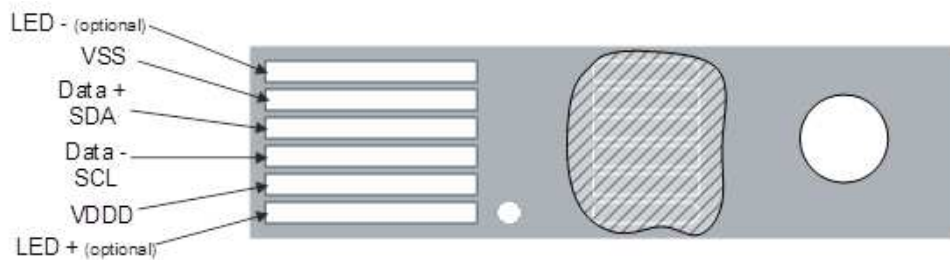
The Fiber Demo Kit is intended solely for evaluation purposes, has no EMI approval and is not advisable for medical use. **ams** therefore is not liable for any damage or harm resulting from its use.

3 Shorten the Cable / Repairing Connections

If the customer desires to repair a connection or shorten the cable, this section explains the procedure to rework the soldering of the wires.

The NanEye standard connector is the 6-pin PCB Flex or the legacy 4-pin connector.

Figure 3:
NanEye's 6-Pin Flex PCB Connector Pinout



Please take the following steps in order to correctly connect the wires to the connector:

- Make sure that all the module's pins are disconnected from any external device and the module is handled in a ESD controlled environment
- Inspect the cable for damaged segment(s)
- Cut off the cable damaged segment(s), with a pliers or a scalpel, remaining only with module with the undamaged cable attached to the camera end

Figure 4:
Cable Cutting Position

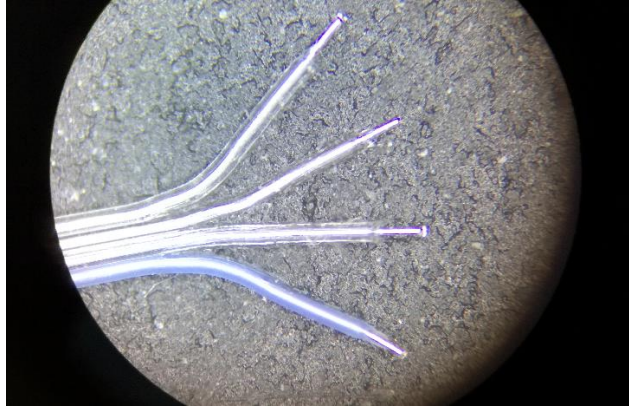


Figure 5:
Cut cable



- Separate the wires along 3 mm, with a scalpel, making sure that the copper wire is not damaged
- Strip carefully 1 mm isolation of the electrical cables, using an appropriated mechanical stripping tool or a fiber optics thermal stripper, without damaging or cutting the copper wire

Figure 6:
Wires Separation and Stripping



- Clean the connector from remains of previous cables, making sure that is no short between copper wires
- When soldering to the connector, respect the correct pin order as shown in Figure 4. The small white dot near the traces, gives orientation to the soldering

Figure 7:
NanEye's 6-Pin PCB Flex Connector Soldered Wires

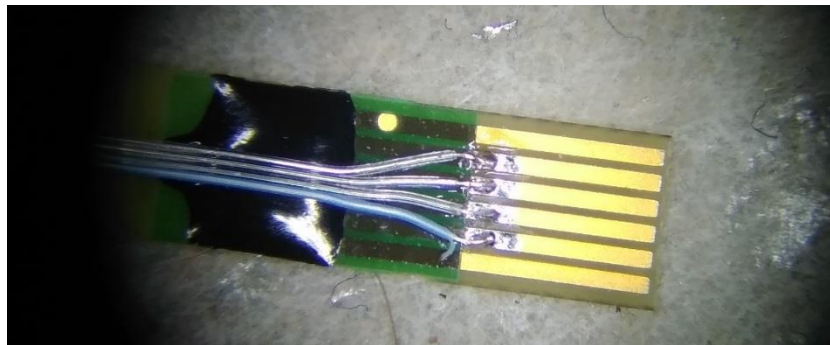


Figure 7 shows an example of the PCB Flex connector, where the colored VSS wire can be easily seen.

Figure 6:
NanEye's 4-Pin Connector Soldered Wires

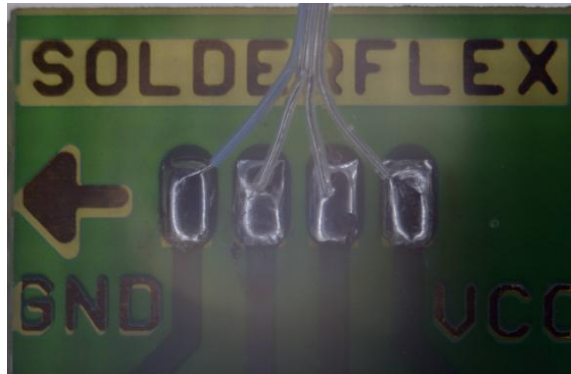


Figure 6 shows an example of the soldered wires on the 4-pin PCB connector, where the VSS/GND wire is on the most-left connector position and VCC is on its most-right.



Attention

Every handling must be performed under ESD controlled environment following established procedures for ESD prevention.

Any integration should be considered as take as reference the NanEye/ NanEye Stereo datasheet, especially section 3 – Pin assignment, section 4 – Absolute Maximum Rating, section 5 – Electrical Characteristics, section 7.2 – Driving the NanEye / NanEye Stereo, section 7.4 – Serial Interface, and section 9.1 – Recommended LVDS Receiver Electronics.

ams is not liable for any damage caused on the module by improper repairing or customer customization.

4 Cleaning the Sensor

For cleaning purposes we recommend the use of a pressurized air duster. A cotton swab may be used to clean some contamination that might appear on the lens. However, when applying it, the operator who is cleaning the camera should do it very carefully and smoothly.



Attention

ams is not liable for any damage caused on the module by improper cleaning procedures.

5 Product Return Policy

ams is not liable for any improper handling, customizing, repairing or cleaning procedures, performed by the customer.

In case a customer finds a need to return a product, our Technical Support Team must be contacted to start an RMA process, in advance to any return of product(s). Only with the approval of the RMA, by the Quality Department, the customer is allowed to return the product(s).

6 Revision Information

Changes from previous version to current revision v1-01	Page
Initial version 1-00	
Version 1-01	

- Page and figure numbers for the previous version may differ from page and figure numbers in the current revision.
- Correction of typographical errors is not explicitly mentioned.

7 Legal Information

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