PAT9136E1-TXQT and PAA5160E1-Q: Chip Cover Glass and Protective Cover Cleaning Procedure (AN04)

General Description

This application note provides the cover glass and protective cover cleaning procedures for cleaning the PAT9136E1-TXQT and PAA5160E1-Q chip.

Ordering Information

Part Number	Description
PAT9136E1-TXQT	Optical Tracking Chip
PAA5160E1-Q	Optical Tracking Chip

RoHS compliant

For any additional inquiries, please contact us at https://www.pixart.com

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1.0 Introduction

1.1 Overview

The PAT9136E1-TXQT and PAA5160E1-Q is PixArt Imaging's the latest optical tracking chip with an integrated VCSEL illumination. This document describes the cleaning procedure for the chip cover glass and protective cover that is installed in front of the chip.

Note: Throughout the application note, the PAT9136E1-TXQT / PAA5160E1-Q is referred to as the "chip".

1.2 Relevant Information

Table 1. Related Document

No.	Item	Version
1	PAA5160E1-Q Product Datasheet	0.82
2	PAA5160E1-Q Sensor Resolution Normalization Application Note (AN00)	1.0
3	PAA5160E1-Q Chip Orientation Determining and Re-mapping Application Note (AN03)	1.0
4	PAT9136E1-TXQT Product Datasheet	0.82

1.3 Terminology

Term	Description
VCSEL	Vertical Cavity Surface Emitting LASER

2.0 Cleaning Procedures

2.1 Chip Cover Glass

The tools needed for cleaning the chip cover glass are:-

1. Antistatic wrist strap.
2. Rubber gloves / finger cot.
3. Plastic head tweezers
4. IPA (95% Isopropyl Alcohol)
5. Lint free industrial cotton swabs.
6. Cleanroom wiper.
7. 3X magnifier with light source.
8. Rubber air blower

Operating procedure

1. Place the PAT9136E1-TXQT or PAA5160E1-Q package on the platform with a 3x magnifier to identify the contaminated location and area.

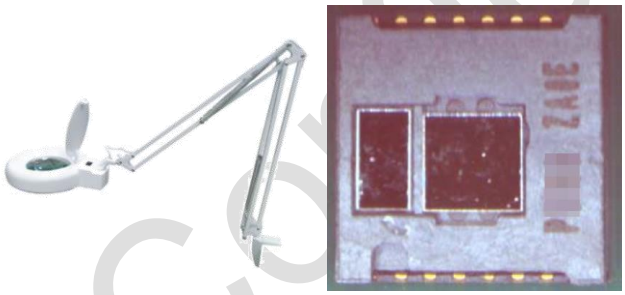

Figure 1. Inspect Chip with 3x magnifier

2. Use the handheld rubber air blower to blow away the contamination. Hold the sensor with plastic head tweezers, then blow away the contamination from sensor surface using the handheld rubber air blower as below. If the contaminant cannot be blown away, proceed to step 3. Else, cleaning is completed

Figure 2. Using Rubber Air Blower

3. Dip the cotton swab with IPA, then dry the excessive IPA with cleanroom wipes

Figure 3. Dipping Cotton Swab with IPA

4. Gently clean the contaminated glass surface with a cotton swab in downward single direction.

Note: If the cotton swab is contaminated, change to a new one and repeat Step 3.

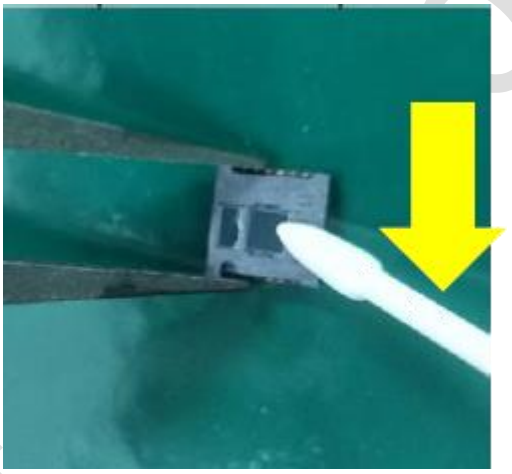

Figure 4. Cleaning in Downward Single Direction

5. Inspect visually using 3x magnifier to make sure the contaminants are removed.

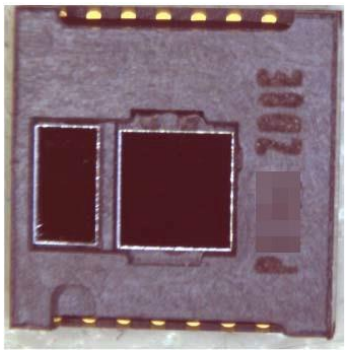

Figure 5. Visual Inspection

2.2 Protective Cover

The tools needed for cleaning the protective cover are:-

1. Antistatic wrist strap.
2. Finger cots.
3. IPA (95% Isopropyl Alcohol)
4. Lint free industrial wipes.
5. 3X magnifier with light source.

Operating procedure

Refer to PixArt's Sensor Kit, PAT9136KS or PAA5160KS.

1. Wear finger cot and hold the sensor kit.

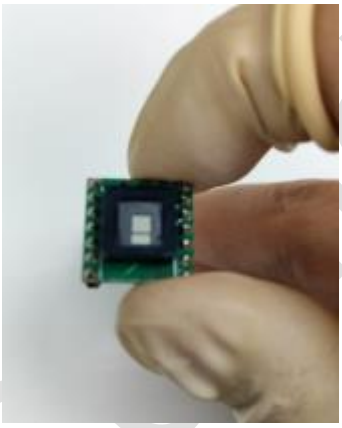

Figure 6. Using Finger cot to hold

2. Inspect with 3X magnifier with a light source.

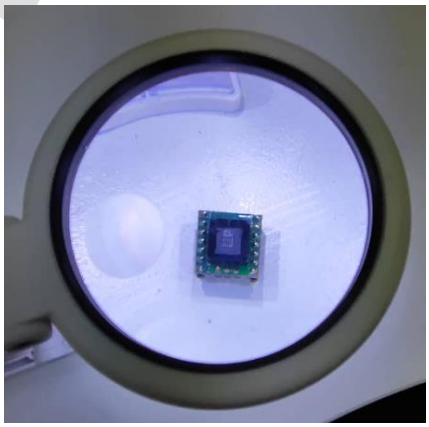

Figure 7. Using Magnifier for Inspection

3. Wipe the cover glass in a single direction with IPA by using the lint free industrial wipe.

Figure 8. Wiping with Lint Free Wipe dipped with IPA in One Direction Only

4. Repeat step 2 and 3 for 2 to 3 times until the cover is visually clean.

Figure 9. Using Magnifier for Inspection

Note: The procedure is applicable for protective covers installed in user's environment

Revision History

Revision Number	Date	Description
1.0	19 Oct 2023	Initial release