

TMAG5170 Slide-By Attachment



ABSTRACT

This document serves to accompany the design files for the slide-by attachment for the TMAG5170 EVM. These design files are provided as an example and may be used in a 3D printer to generate a demonstration of tracking linear movement using a three-dimensional Hall effect sensor.

Design files described in this document can be downloaded from [Slide-By Design Files](#).

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1 Introduction

This slider attachment uses an N42 grade cylindrical magnet as a magnetic field source to demonstrate the ability of TMAG5170 to track linear motion of a nearby magnet. The magnet is glued into the slider object, which then may pass freely down the length of the slider track. [Tracking Slide-By Displacement with Linear Hall-Effect Sensors](#) (SBAA513).

Nylon components were selected as they are non-magnetic and will not interfere with the magnetic field and bond well when glued.

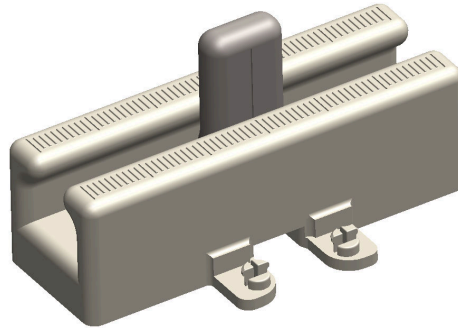


Figure 1-1. TMAG5170 Slide-By Attachment

2 Assembly Guide

Item	Description	Quantity
Slider Track	Track.STL	1
Slider	Slider.STL	1
1/4" dia. x 3/16" thick Cylindrical magnet	NdFeB (N42): available at K&J Magnetics	1
8333-20G	Super Glue	0.02 oz

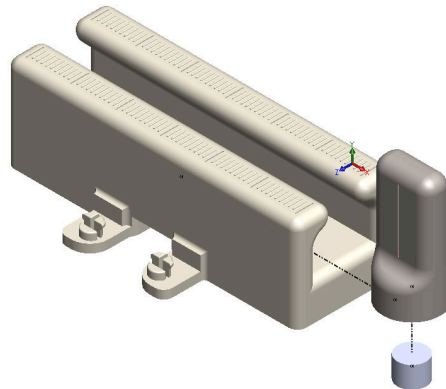


Figure 2-1. Exploded View

Step 1- Print the Slider (Slider.STL)

This piece carries the magnet and allows the user to grip. Additionally, a centerline is visible to assist with locating the magnet center.



Figure 2-2. Slider

Step 2 - Glue the magnet into the bottom opening of the slider

Glue the magnet into the slider. The magnet should seat flush with the bottom of the slider.



Figure 2-3. Complete Slider Assembly

Step 3 - Print the Slider Track (Track.STL)

This is the central fixture of the assembly. It will clip to the EVM and provided a guided path for the magnet to pass over the sensor. The markings along the top of the track are spaced at 1mm intervals.

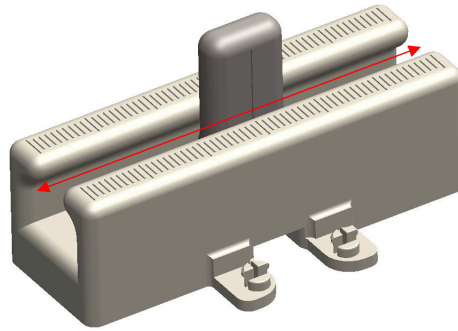


Figure 2-4. Slide-By Function

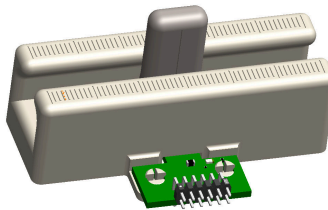


Figure 2-5. EVM Attach

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