

MRD5165 Eagle Kit *Integration Guide*



Revision History

Revision	Date	Description
1.0	Jan 31, 2024	Preliminary version

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ABSTRACT

This unboxing and integration guide describes the camera modules connections, SIM insert, opening up the enclosure and re-assembling the MRD5165 Eagle Kit.

Note: Information in this document is subject to change. Contact us for the most updated version of this document

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Abbreviations & Acronyms

Many acronyms and abbreviations are used throughout this manual. Use the table below to navigate unfamiliar terms used in this document.

Table 1-1: Abbreviations & Acronyms

Acronym	Definition
AI	Artificial Intelligence
BLE	Bluetooth Low Energy
BT	Bluetooth
FCU	Flight Control Unit

Prerequisites

- PH0 size star screwdriver
- PH1 size star screwdriver

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1. Introduction

This guide provides instructions for unboxing and integrating the MRD5165 Eagle Kit, detailing the connections of camera modules, SIM card insertion, enclosure opening, and reassembly.

2. MRD5165 Eagle Kit Contents

The MRD5165 Eagle Kit includes:

1. MRD5165 Eagle Board with embedded MRD5165 SoM
2. MRD5165 Flight Control Unit
3. Basic Accessories Kit
4. Vision Accessories Kit
5. ReadMe document

* The MRD5165 Eagle kit include pre-installed system software. LED indication can be witnessed after power ON.

2.1. Eagle-Kit Accessories:

Following table identifies the various components in each Accessories Kit.

Table 2-1: Basic Accessories kit

Sl. No	Accessories	Description	Qty
1	DC Adapter	12V (60W) AC/DC Adapter	1
2	Power chord	AC power chord	1
3	Power cable	Custom B2B power cable	1
4	I-PEX cable	Micro coaxial cable (100mm length) *	2
5	I-PEX Adapter board	IPEX cable camera adapter board	1
6	Wi-Fi Antenna	RF Flat Patch Antenna 2.4GHz/5.4GHz	2
7	USB Type-C Cable	USB3.0 Type-C to A cable	1
9	USB Micro-B Cable	USB 2.0 Micro-B to A cable	1
10	MHF4 to UFL cable	SMA to MHF4 cable	4
11	I2C cable	4-pin cables (Can be used for CAN1, CAN2, I2C2 ports)	2
12	CAN cable	4-pin cables (Can be used for CAN1, CAN2, I2C2 ports)	2
13	Power cable	6-pin cable (Can be used for PSENSE, FR-SKY, SERIAL 1, GPS2 ports)	1
14	Buzzer cable	6-pin cable with Micro USB (Can be used for USB port)	1
15	GPS1 cable	8-pin cable (Can be used for GPS1 port)	1
16	Serial Cable	6-pin cable (Can be used for FR-SKY, SERIAL 1, GPS2 ports)	1

Table 2-2: Vision Accessories kit

Sl. No	Accessories	Description	Qty
1	IMX577 camera module	Main camera	1
2	OV9282 camera module	Tracking camera	1

3	Camera Adapter board	IMX577 Camera Adapter board	1
4	Camera Adapter board	OV9282 Camera Adapter Board	1

Table 2-3: Cable Accessories kit

Sl. No	Accessories	Description	Qty
1	USB Micro-B Cable	USB 2.0 Micro-B to A cable	1
2	IX Ethernet cable	Ethernet IX Type A to RJ45 cable	1
3	HDMI cable	HDMI-A to HDMI Micro-D cable	1

Table 2-4: Connectivity Accessories kit

Sl. No	Accessories	Description	Qty
1	5G modem	5G /4G/3G FR1 Bands ,M.2 FF Module	1
2	5G antenna kit	5G/4G Monopole Antennas	1
3	5G MHF4 to UFL cable	SMA to MHF4 cable	4

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3. Eagle Kit Integration

3.1. Disassemble Enclosure

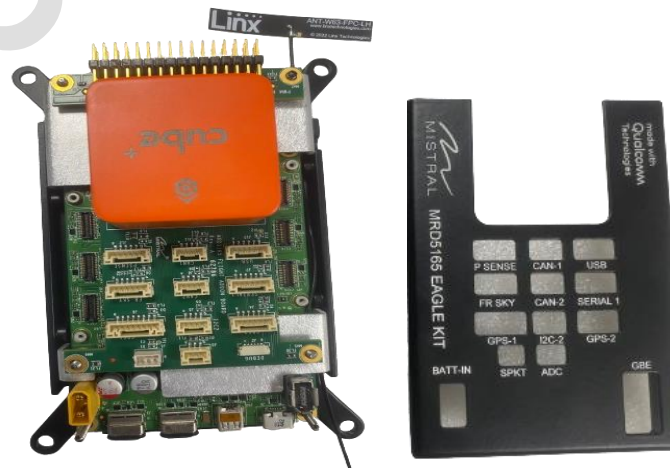
Step 1: The Eagle Kit setup comes equipped with a built-in Wi-Fi antenna and various exposed peripheral connections. In the integration guide, refer below instructions on mounting the camera adapter and disassembling the Eagle Kit enclosure.



Step 2: For the integration of the camera adapter in the Eagle Kit, locate the mounted screws on both the left and right sides and remove screws using PH1 size star screwdriver, as depicted in the image below.



Step 3: Take off the top enclosure plate.



Step 4: Take off the Flight Controller Unit.



Step 5: Remove the middle plate containing the heat sink.



3.2. Integrate Camera Adapter Board

Step 1: Assemble the essential accessories for the Eagle Kit, including components like the Camera Adapter and IPEX Cable set.



Step 2: To access CAM2 and CAM4 Ports, connect the IPEX Cable to the Camera Adapter board according to the image below.

CAM2 serves as the OV9282 Camera, while CAM4 functions as the IMX77 Camera.



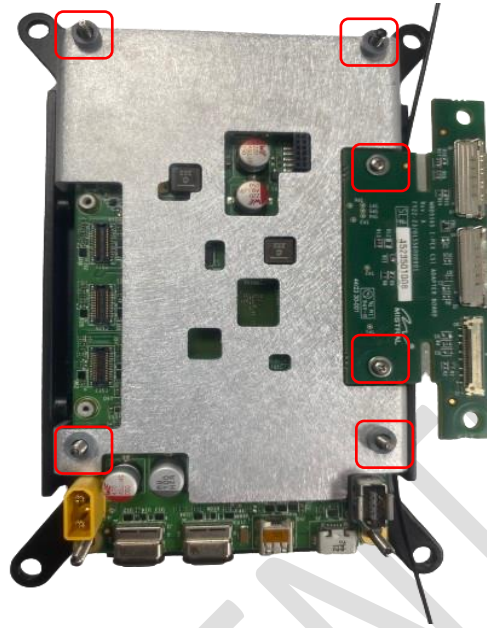
Step 3: Install the Camera Adapter board onto the Eagle Board according to the arrangement depicted in the image below. Align the camera adapter board with the mounting hole.



Step 4: Gather the screws required for fitting the Camera Adapter board.



Step 5: Mount the camera screws using PH0 size star screwdriver, spacer and place the heat sink plate on top of the Eagle Board.



3.3.Reassemble Enclosure

Step 1: Position the Flight Controller unit onto the Eagle Board.



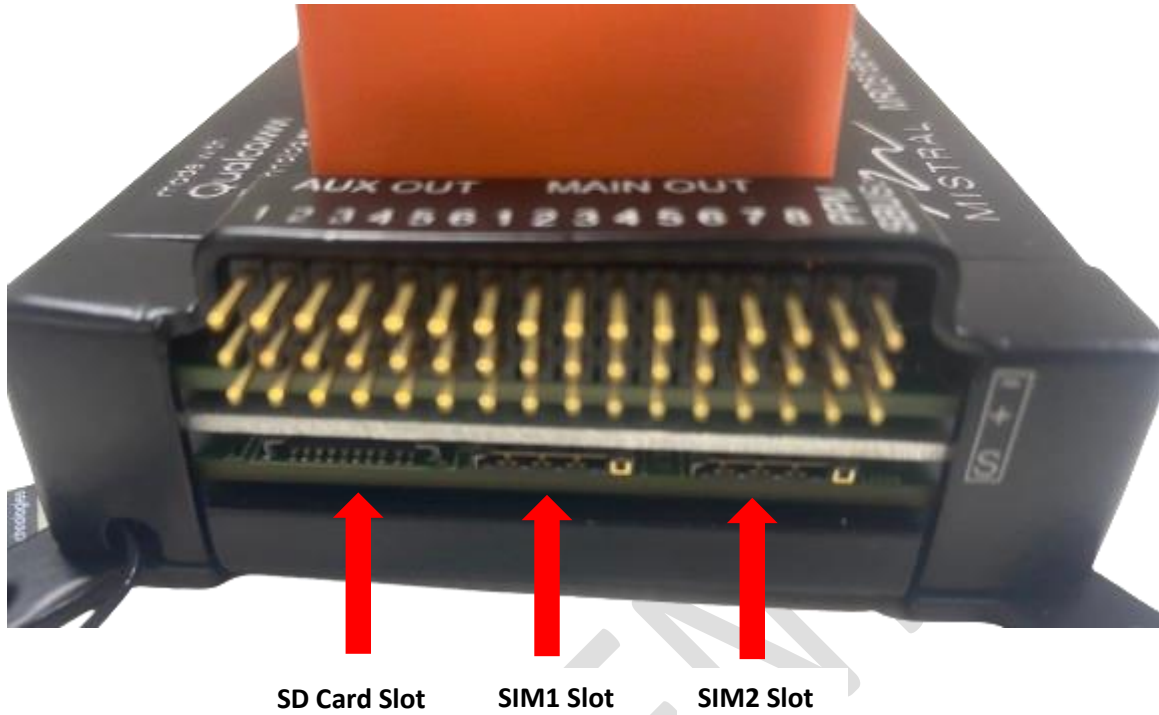
Step 2: Secure the top enclosure plates in position by using the provided screws.



3.4. Flight Controller Unit Cable set Integration



3.5. SD Card and SIM Location



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4. LIST OF SCREWS/FASTENERS:

SL.NO	MATERIAL	PART DESCRIPTION	QTY/SET
1	SS-304	M2.5 X 22 SELF CLINCH FLUSH HEAD SCREW	6
2	NYLON	ID 2.5 X 6.5 THRU HOLE SPACER	6
3	NYLON	ID 2.5 X 2.25 THRU HOLE SPACER	8
4	SS-304	M2.5 HEX NUT	6
5	MS	M2.5 X 6 BLACK OXIDE CSK PHILLIPS SCREW	6
6	SS-304	M1.6 X 5 PAN HEAD SCREW	4
7	SS-304	M2.5 PLAIN WASHERS	4

5. Additional Assistance

Please contact our support team for further assistance :

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