User Guide for RGBD Camera

1. Introduction

This document provides an introduction to the hardware and software of the **Obbec Gemini2 RGBD camera**. It is designed for roboticists who wish to implement the camera on the wrist of a manipulator, offering guidance and answers to common queries.

2. Overview

One could find all details of the camera in the following links.
Useful Links

1. Orbbec website: https://www.orbbec.com/products/stereo-vision-camera/gemini-2/
2. Orbbec developer community: https://developer.orbbec.com.cn/
3. Official Documentation: https://vcp.developer.orbbec.com.cn/documentation?doc=doc-55

2.1 Camera Specifications

NOTE:

1. regular 5V2A power supply is fine.

Camera Specifications	
Depth Range	**0.15–10m**
Depth Resolution/FPS	Up to **1280X800@30fps**
Depth FOV	H91° V66°
RGB Resolution/FPS	**Up to 1920X1080@30fps**
RGB FOV	H86° V55°
IMU	Supported

Precision	≤ 2% @ 2m
Data Connection	**USB 3.0 Type-C**
Power Input	USB 3.0 Type-C
Power Consumption	Average <2.5W
SDK Support	Orbbec SDK
Data Output	**Point Cloud, Depth Map, IR & RGB**
Dimensions (W*H*D)	90mm x 25mm x 30mm
Weight	98g
Installation	Bottom: ¼-20UNC; Back: 2 x M3

3. Orbbec SDK

The SDK provides both low-level and high-level APIs that are simple and easy to use, allowing developers to use it flexibly in different scenarios. Official github website: https://github.com/orbbec/OrbbecSDK

Toolkit	**view data stream**	**record data**	**control camera**
SDK	yes	yes	yes
SDK for python	yes	yes	yes
SDK for ROS2	yes	yes	yes
OrbbecViewer	yes	yes	yes

4.1 Environmet Setup

https://vcp.developer.orbbec.com.cn/documentation?doc=doc-55

4.2 Usage

One could follow the guidance of the official documentation **NOTE:**

1. For OrbbecViewer:
    1. the raw data of imu is recorded in .csv files

2. the video stream data (both color and depth) is recorded in `.bag` files, ros1 is needed for decoding and playing.
3. the image is recorded in `.png` files.

5. FAQ

[WIP]