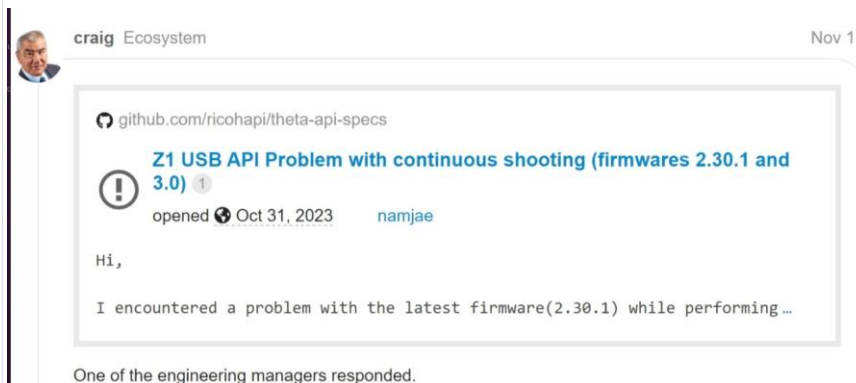


Request of AS for the Ricoh z1

Dear Craig,

I am Nathan, the CEO of TeeLabs Co., Ltd. I am writing to address an issue that arose on June. 23 (at theta360.guide) and October 31 (at Github), 2023, concerning a service request initiated by our research head, Mr. Dalho Park.



Our company specializes in the digital transformation of physical spaces into digital models. We provide a digital twin kit that includes both scanning hardware and modeling software.

In the past year, we developed a groundbreaking handheld scanning device (succeeding the robot and backpack model) using the Ricoh Z1 as an image sensor. Initially, our hardware incorporated Sony's camera (as seen in the gray model in the right), but we later switched to Ricoh's model (noted in the brown scanner) due to its superior quality.

Mobile Robot Type



- Scan speed: 1km/h
- Duration time: 90mins
- Price: \$200,000

Backpack Type



- Scan speed: 4km/h
- Duration time: 60mins
- Price: \$100,000

Handheld Type




- Scan speed: 2km/h
- Duration time: 90mins
- Price: \$25,000

However, starting from October 31, 2023, we have experienced operational issues with the camera during continuous image capture. This has prompted Mr. Park to reach out for assistance. Fortunately, we had a sufficient stock of Z1 units to meet our immediate customer demands. However, we are now facing challenges in fulfilling hardware orders, especially following this year's CES event (with the brochure below).

Product
Data acquisition HW (TeeScanner and 360 Camera) and Modeling SW (TeeStudio) are on-sale.

Data Acquisition HW



TeeScanner enables quick and precise scanning. With the scanned data, 3D PCD/Mesh can be built up.
By acquiring further images with a 360 camera, advanced and premium models (360° Virtual Tour and TeeVR) can be generated.

Modeling SW

TeeStudio Subscription model	Data Acquisition HW		Modeling SW			Features
	TeeScanner	360 Camera	3D PCD /Mesh	360° Virtual tour	TeeVR	
Basic	○	-	○	-	-	• Walk around with our scanner and create a 3D PCD/Mesh of your indoor surroundings (scanning speed: 2 km/hr).
Advanced ¹	○	○	○	○	-	• Create a 360° Virtual Tour model by combining the 3D PCD with images captured using a 360 camera (scan time required: around 1,000 m ² /11,000 ft ² /hour for typical environments). • After minimal editing, you can publish your 360° Virtual Tour on web.
Premium ¹	○	○	○	○	○	• Upgrade your previous 360° Virtual Tour into a TeeVR Model. • Optimize image quality and mesh generation using TeeStudio. • Obstacles are automatically removed in the modeling process, and objects can be freely located and utilized afterward.

¹Scheduled to be released in the second half of 2023

Patent and Standard

Scanner IP
KR 10-1746792 / KR 10-1721085

Modeling IP
KR 10-1121518 / KR 10-1242354 / KR 10-1391525 / KR 10-1391554 / KR 10-1562462 / KR 10-1615618 / KR 10-1679741 / US 09727978 / EP 03091505 / JP 06418075 / CN 2,2016103225183 / KR 10-1746792 / KR 10-1855870 / KR 10-1962755 / KR 10-2021-0155905 / KR 10-1707044 / KR 10-1920823 / KR 10-1927861 / KR 10-1990634 / KR 10-2339472 / KR 10-2321704 / KR 10-1835434 / US 10602115 / EP 03321888 / JP 06687204 / CN 2,2016800403279 / KR 10-2197732 / US 10957100 / EP 019166491.1 / JP 2019068450 / CN 2019102642335 / KR 10-2021-7010004 / US 16722664 / US 10349033 / EP 16821650


VPS IP
KR 10-2387797 / US 167967181 / EP 20757508.5 / JP 07138361

International Standard
ISO/IEC 23485:2022 Object/Environmental representation for image-based rendering in virtual/mixed and augmented reality

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3D PCD/Mesh

360° Virtual Tour

TeeVR (Full 3D)

We would greatly appreciate your assistance in providing a software code that enables a rollback from version 2.30.1 to 2.11.1. Alternatively, if a solution to the current issues is forthcoming, we would be grateful for an update on the expected timeline.

We are keen to continue using Ricoh's products due to their unmatched quality. Your prompt response will be crucial in helping us decide whether to continue with Ricoh or to explore Sony for our current and future orders.

Thank you for your attention to this matter. I look forward to your prompt response.

Best regards,

Nathan Doh CEO

TeeLabs Co., Ltd.