

MU USB Packet Size Setting

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Introduction

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Privacy Information

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Trademarks

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Glossary of Terms, Acronyms and Abbreviations

Term /Abbreviation	Definition
Fps	Frames per second
TBD	To Be Defined

Document Scope and Purpose

The purpose of this document is to provide information about USB packet size setting on MU camera. Document is dedicated for R&D and for customers.

Referenced Documents

[1] -

Introduction

This document describes requested feature - setting of USB packet size.

Compatible-Size

Advantages:

- Works stable on most tested USB hosts, especially if other USB 2.0 devices connected to the same USB hub

Disadvantages:

- Higher CPU payload (~20%)
- Lower fps

Enhanced-Size

Advantages:

- Higher data rate - higher number of frames per second

Disadvantages:

- Possible compatibility problems on some configurations or multiple devices in same hub.

Packet size setting

Two packet sizes used:

- Compatible-Size - where packets with 512 bytes are used (default)
- Enhanced-Size - where packets with 1024 bytes are used



Note:

From XIMEA API Software Package V3.17.05, the Compatible-Size with 512 bytes per pixel mode is default.

How to set Packet Size (Windows registry patch needed):

Compatible-Size - 512 bytes (default setting)
[HKEY_CURRENT_USER\SOFTWARE\SoftHard\mm40api]
"usb20pktsize"=dword:00000000

Enhanced-Size - 1024 bytes
[HKEY_CURRENT_USER\SOFTWARE\SoftHard\mm40api]
"usb20pktsize"=dword:00000001

Camera frame rate dependency

Table 1. Fps results versus packet size setting and camera mode

Packet size setting	Camera mode						
	Bin 1x1 [fps]	Bin 2x2 [fps]	Bin 4x4 [fps]	Skp 2x2 [fps]	Skp 4x4 [fps]	Skp 6x6, [fps]	Skp 7x7 [fps]
Compatible-Size 512 bytes packet size	4.6	14.1	31.4	18.2	71.8	142.1	173.6
Enhanced-Size 1024 bytes packet size	5.8	16.9	35.9	21.9	82.1	159.9	195.3



Note:
FPS calculated on 12 bit per pixel depth and bandwidth 384 Mb/s.