

## ? Trigger Setting

### ■ Sampling frequency (fastest trigger frequency)

Set the fastest frequency for imaging on the controller anywhere in the range of 10 Hz and 64 kHz.

In "Continuous trigger" mode, triggers will be issued at the frequency set here.

In "External trigger" or "Encoder trigger" mode, enter a trigger frequency at an interval longer than the frequency set here.

Setting the sampling frequency (fastest trigger frequency) longer extends the exposure time for measurements with insufficient intensity.

The settable fastest frequency depends on the following. (Table to the right)


- Measurement range (X/Z direction) \* Imaging setting
- ON/OFF of binning \* Imaging setting
- Peak selection (Use "Remove X(Y) multi refle." or not) \* Imaging setting
- Image mode (Use "Multi emis" or not. emis. times) \* Imaging setting
- ON/OFF of parallel imaging \* Common measurement setting
- ON/OFF of prevention of mutual interference \* Trigger setting

The table (right) shows the setting values of "imaging mode: standard, prevention of mutual interference: OFF, peak selection: standard".

Measurement range		Binning	Parallel imaging (*1)	Settable fast sampling frequency (Fast trigger frequency)
Z-direction	X-direction			
FULL	FULL	OFF	OFF	1kHz (default setting* <sup>2</sup> )
MIDDLE				2kHz
SMALL				4.13kHz
FULL				4.13kHz
MIDDLE	4.13kHz			
SMALL	8kHz			
FULL	SMALL			4.13kHz
MIDDLE				8kHz
SMALL				8kHz
FULL	FULL			ON
MIDDLE		8kHz		
SMALL		16kHz		
FULL		8kHz		
MIDDLE	MIDDLE	16kHz		
SMALL	16kHz			
FULL	SMALL	16kHz		
MIDDLE		16kHz		
SMALL		32kHz		
FULL	FULL	OFF	ON	
MIDDLE				4.13kHz
SMALL				8kHz
FULL				4.13kHz
MIDDLE	MIDDLE			4.13kHz
SMALL	8kHz			
FULL	SMALL			4.13kHz
MIDDLE				8kHz
SMALL				16kHz

## ? Trigger Setting

\*1 "Parallel imaging" can be turned on only in high-speed mode.

\*2 With the initial settings, the settable fastest sampling frequency (fastest trigger frequency) is 1 kHz because, in addition to  cells in the table, [Imaging mode] is "Multi emission (optimized light intensity)/Emission times: 2".

Any of the following settings basically slows down the settable fastest sampling frequency (fastest trigger frequency) to approximately half the speed before setting.

- [Prevention of mutual interference] is turned on.
- [Remove X multiple reflection] or [Remove Y multiple reflection] is selected in [Peak selection]

Any of the following settings basically slows down the settable fastest sampling frequency (fastest trigger frequency) for speed emission times without setting.

- "Multi emission (optimized light intensity)" is selected for [Imaging mode].
- "Multi emission (synthesis)" is selected for [Imaging mode].

When using two heads, imaging is operated at the slower settable fastest sampling frequency (fastest trigger frequency) of the two.

Measurement range		Binning	Parallel imaging (*1)	Settable fast sampling frequency (Fast trigger frequency)
Z-direction	X-direction			
FULL	FULL	ON	ON	8kHz
MIDDLE				16kHz
SMALL				16kHz
FULL	MIDDLE			16kHz
MIDDLE				16kHz
SMALL				32kHz
FULL	SMALL			16kHz
MIDDLE				32kHz
SMALL				64kHz

\*1 Only the high-speed mode can turn [Parallel imaging] on.

## ? Trigger Setting

### ■ Trigger mode

Trigger refers to the timing of imaging (i.e. releasing the camera shutter in photography).

#### <Continuous trigger>

Issues triggers at a specified sampling frequency.

#### <External trigger>

Issues triggers externally. There are five methods to enter.

- Input terminal [TRG]
- Communication command (Ethernet, USB, RS-232C)
- The trigger button on the LJ-Navigator2
- The trigger button on the display monitor
- The [TRG] key on the console

#### <Encoder trigger>

Issues triggers based on signals from the input terminal [ENCODER].

#### [Input mode]

Sets the relation between phase A/B input pulses and trigger issuance.

Single phase: Issues triggers irrespective of phase B. (1)

Two phases: Issues triggers by a combination of phase A/B. (2)

#### ○ Multiplication:

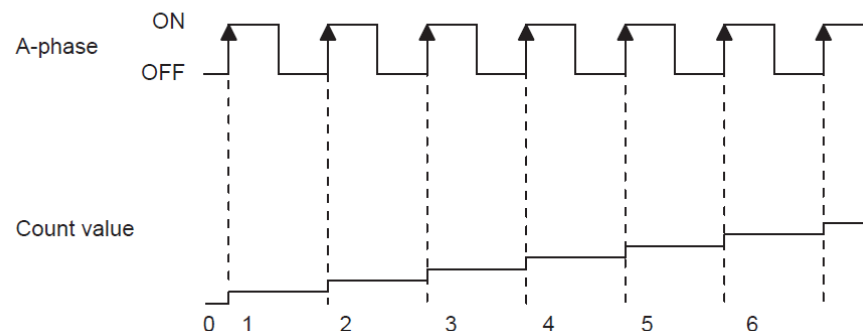
Sets the number of triggers to issue rather than the number of input pulses (phase A).

Ex) Two phases two multiplications ... Issue twice as many triggers as the number of input pulses (phase A).

1

### ■ 1-phase 1 TM (no dir.)

It counts the rising of A-phase.

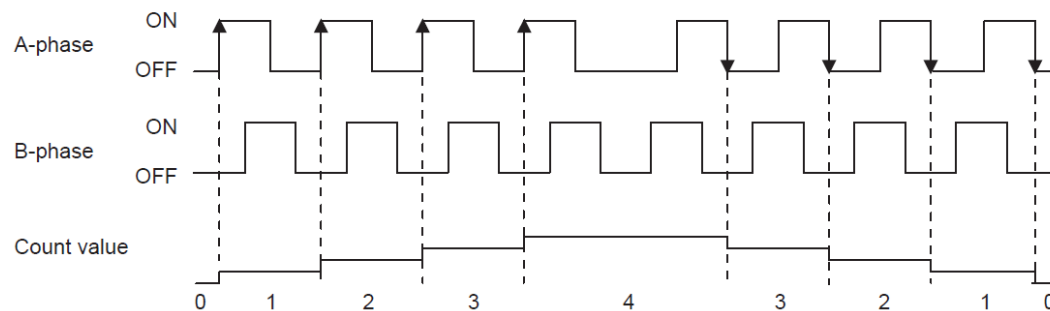


2

### ■ 2-phase 1 time

When B-phase is OFF, the count value will be incremented by the rising of A-phase.

When B-phase is OFF, the count value will be decremented by the falling of A-phase.



## ? Trigger Setting

[Skipping]

For the number of triggers to issue specified in input mode, sets one out of how many triggers is valid. Used for making the trigger interval longer than the pulse interval of the encoder.

### ■ Pitch between triggers

When this setting is turned on, the scale of the vertical axis (Y axis) on the height image display window is converted into an actual distance by entering a distance for which the workpiece moves between triggers.

\* There is no need to set this for immovable workpieces or when Y direction information is not required.

### ■ Batch measurement (3)

More than one profile is measured at a time.

The number of profiles batched is called the batch point, which is set between 50 and 15000. This is useful for measuring workpieces by type.

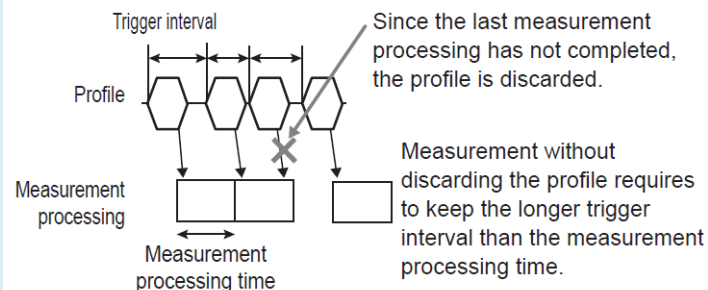
The batch period is controlled with the following methods:

- Input terminal [MEASURE\_START]/[MEASURE\_STOP]
- Communication command (Ethernet, USB, RS-232C)
- The batch start/stop buttons on the LJ-Navigator2
- The batch start/stop buttons on the display monitor

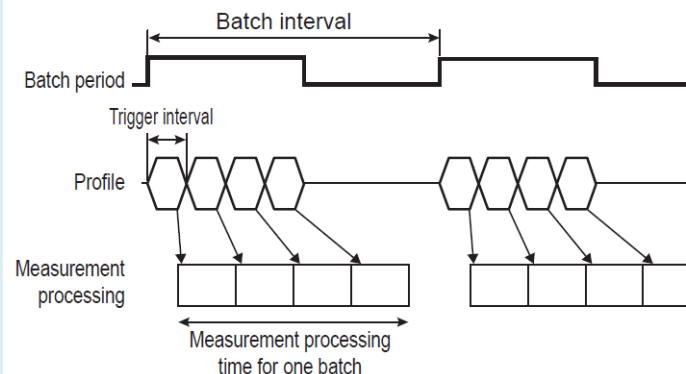
\* The batch period ends when all batch points have been sampled.

3

In case that the batch measurement is OFF.



In case that the batch measurement is ON.



Even when the trigger interval is shorter than the measurement processing time, the measurement can be done at the fast trigger interval without discarding the profile. When the batch interval is longer than the measurement processing time for one batch, the measurement can be repeated at the fast trigger interval.