Trigger Command Group

Trigger Overview

You use the commands in the Trigger Command Group to control all aspects of triggering for the oscilloscope.

There are two triggers: A and B. Where appropriate, the command set has parallel constructions for each trigger.

You can set the A or B triggers to edge mode. Edge triggering lets you display a waveform at or near the point where the signal passes through a voltage level of your choosing.

You can also set A triggers to pulse and logic modes. Pulse triggering lets the oscilloscope trigger whenever it detects a pulse of a certain width or height. Logic triggering lets you logically combine the signals on one or more channels. The oscilloscope then triggers when it detects a certain combination of signal levels.

Trigger Commands

Command	Description
TRIGger?	Returns current trigger parameters for the oscilloscope
TRIGger	Forces a trigger event to occur
TRIGger:A?	Returns current A trigger parameters
TRIGger:A	Sets A trigger level to 50%
TRIGger:A:EDGE?	Returns the source, coupling and source for the A edge trigger
TRIGger:A:EDGE:COUPling?	Returns the type of coupling for the A edge trigger
TRIGger:A:EDGE:COUPling	Sets the type of coupling for the A edge trigger
TRIGger:A:EDGE:SLOpe?	Returns the slope for the A edge trigger
TRIGger:A:EDGE:SLOpe	Sets the slope for the A edge trigger
TRIGger:A:EDGE:SOUrce?	Returns the source for the A edge trigger
TRIGger:A:EDGE:SOUrce	Sets the source for the A edge trigger
TRIGger:A:HOLDoff?	Returns the A trigger holdoff parameters
TRIGger:A:HOLDoff:ACTUal?	Returns the holdoff time actually used by the A trigger
TRIGger:A:HOLDoff:BY?	Returns the type of holdoff for the A trigger
TRIGger:A:HOLDoff:BY	Sets the type of holdoff for the A trigger
TRIGger:A:HOLDoff:TIMe?	Returns the A trigger holdoff time
TRIGger:A:HOLDoff:TIMe	Sets the A trigger holdoff time
TRIGger:A:LEVel?	Returns the level for the A trigger
TRIGger:A:LEVel	Sets the level for the A trigger
TRIGger:A:LOGIc?	Returns all of the A trigger logic parameters
TRIGger:A:LOGIc:CLAss?	Returns the type of A trigger logic
TRIGger:A:LOGIc:CLAss	Sets the type of A trigger logic
TRIGger:A:LOGIc:FUNCtion?	Returns the logical combination of the input

	channels for the A logic trigger
TRIGger:A:LOGIc:FUNCtion	Sets the logical combination of the input channels for the A logic trigger
TRIGger:A:LOGIc:INPut?	Returns the A logic trigger input for channels 1-3.
TRIGger:A:LOGIc:INPut:CH<x>?	Returns the input settings for the specified logic trigger channel
TRIGger:A:LOGIc:INPut:CH<x>	Specifies the input settings for the specified logic trigger channel
TRIGger:A:LOGIc:PATtern?	Returns the conditions for generating an A logic pattern trigger
TRIGger:A:LOGIc:PATtern:INPut:CH4?	Returns the A logic trigger input for channel 4
TRIGger:A:LOGIc:PATtern:INPut:CH4	Sets the A logic trigger input for channel 4
TRIGger:A:LOGIc:PATtern:WHEn?	Returns the condition for generating the A logic pattern trigger
TRIGger:A:LOGIc:PATtern:WHEn	Sets the condition for generating the A logic pattern trigger
TRIGger:A:LOGIc:PATtern:WHEn :LESSLimit?	Returns the maximum time that the selected pattern may be true and still generate an A logic pattern trigger
TRIGger:A:LOGIc:PATtern:WHEn :LEssLimit	Sets the maximum time that the selected pattern may be true and still generate an A logic pattern trigger
TRIGger:A:LOGIc:PATtern:WHEn :MORELimit?	Returns the minimum time that the selected pattern may be true and still generate an A logic pattern trigger
TRIGger:A:LOGIc:PATtern:WHEn :MORELimit	Sets the minimum time that the selected pattern may be true and still generate an A logic pattern trigger
TRIGger:A:LOGIc:SETHold?	Returns clock edge polarity, voltage threshold and source; data voltage threshold and source; and setup/hold times for violation triggering
TRIGger:A:LOGIc:SETHold:CLOCk?	Returns clock edge polarity, voltage threshold and source input for setup/hold triggering
TRIGger:A:LOGIc:SETHold:CLOCk:EDGE?	Returns the clock edge polarity for setup and hold triggering
TRIGger:A:LOGIc:SETHold:CLOCk:EDGE	Sets the clock edge polarity

	for setup and hold triggering
TRIGger:A:LOGIc:SETHold:CLOCk :SOUrce?	Returns the clock source for the A logic trigger setup and hold input
TRIGger:A:LOGIc:SETHold:CLOCk :SOUrce	Sets the clock source for the A logic trigger setup and hold input
TRIGger:A:LOGIc:SETHold:CLOCk :THReshold?	Returns the clock voltage threshold for setup and hold trigger
TRIGger:A:LOGIc:SETHold:CLOCk :THReshold	Sets the clock voltage threshold for setup and hold trigger
TRIGger:A:LOGIc:SETHold:DATa?	Returns the voltage threshold and data source for the setup/hold trigger
TRIGger:A:LOGIc:SETHold:DATa:SOUrce?	Returns the data source for the setup and hold trigger
TRIGger:A:LOGIc:SETHold:DATa:SOUrce	Sets the data source for the setup and hold trigger
TRIGger:A:LOGIc:SETHold:DATa :THReshold?	Returns the data voltage threshold for setup and hold trigger
TRIGger:A:LOGIc:SETHold:DATa :THReshold	Sets the data voltage threshold for setup and hold trigger
TRIGger:A:LOGIc:SETHold:HOLDTime?	Returns the hold time for the setup and hold violation triggering
TRIGger:A:LOGIc:SETHold:HOLDTime	Sets the hold time for the setup and hold violation triggering
TRIGger:A:LOGIc:SETHold:SETTime?	Returns the setup time for setup and hold violation triggering
TRIGger:A:LOGIc:SETHold:SETTime	Sets the setup time for setup and hold violation triggering
TRIGger:A:LOGIc:STATE?	Returns the data input and trigger criteria for the A logic trigger
TRIGger:A:LOGIc:STATE:INPut:CH4?	Returns the slope for channel 4 of the A logic state trigger
TRIGger:A:LOGIc:STATE:INPut:CH4	Sets the slope for channel 4 of the A logic state trigger
TRIGger:A:LOGIc:STATE:WHEn?	Returns the condition for generating an A logic state trigger
TRIGger:A:LOGIc:STATE:WHEn	Sets the condition for generating an A logic state trigger
TRIGger:A:LOGIc:THReshold?	Returns the threshold voltage for all channels in A logic trigger

TRIGger:A:LOGIc:THReshold:CH<x>?	Returns the A logic trigger threshold voltage for the specified channel
TRIGger:A:LOGIc:THReshold:CH<x>	Sets the A logic trigger threshold voltage for the specified channel
TRIGger:A:MODe?	Returns the A trigger mode
TRIGger:A:MODe	Sets the A trigger mode
TRIGger:A:PULse?	Returns the A pulse trigger parameters
TRIGger:A:PULse:CLAss?	Returns the type of pulse on which to trigger
TRIGger:A:PULse:CLAss	Sets the type of pulse on which to trigger
TRIGger:A:PULse:GLItch?	Returns the current A glitch pulse trigger parameters
TRIGger:A:PULse:GLItch:POLarity?	Returns the polarity for the A pulse glitch trigger
TRIGger:A:PULse:GLItch:POLarity	Sets the polarity for the A pulse glitch trigger
TRIGger:A:PULse:GLItch:TRIGIF?	Returns the acceptance or rejection of pulse glitch trigger, based on width.
TRIGger:A:PULse:GLItch:TRIGIF	Sets the acceptance or rejection of pulse glitch trigger, based on width.
TRIGger:A:PULse:GLItch:WIDth?	Returns the width for the A pulse glitch trigger
TRIGger:A:PULse:GLItch:WIDth	Sets the width of the A pulse glitch trigger
TRIGger:A:PULse:RUNT?	Returns the current A runt pulse trigger parameters
TRIGger:A:PULse:RUNT:POLarity?	Returns the polarity for the A pulse runt trigger
TRIGger:A:PULse:RUNT:POLarity	Sets the polarity for the A pulse runt trigger
TRIGger:A:PULse:RUNT:THReshold?	Returns the upper and lower thresholds for the A pulse runt trigger
TRIGger:A:PULse:RUNT:THReshold:BOTh	Sets the upper and lower switching thresholds for the A pulse runt trigger
TRIGger:A:PULse:RUNT:THReshold:HIGH?	Returns the upper limit for the A pulse runt trigger
TRIGger:A:PULse:RUNT:THReshold:HIGH	Sets the upper limit for the A pulse runt trigger
TRIGger:A:PULse:RUNT:THReshold:LOW?	Returns the lower limit for the A pulse runt trigger
TRIGger:A:PULse:RUNT:THReshold:LOW	Sets the lower limit for the A pulse runt trigger
TRIGger:A:PULse:RUNT:WHEn?	Returns the type of pulse

	width the trigger checks for when it uncovers a runt
TRIGger:A:PULse:RUNT:WHEn	Sets the type of pulse width the trigger checks for when it uncovers a runt
TRIGger:A:PULse:RUNT:WIDth?	Returns the minimum width for A pulse runt trigger
TRIGger:A:PULse:RUNT:WIDth	Sets the minimum width for A pulse runt trigger
TRIGger:A:PULse:SOURce?	Returns the source for the A pulse trigger
TRIGger:A:PULse:SOURce	Sets the source for the A pulse trigger
TRIGger:A:PULse:TIMEOut?	Returns the parameters for the A pulse timeout trigger
TRIGger:A:PULse:TIMEOut:POLarity?	Returns the polarity for the A pulse timeout trigger
TRIGger:A:PULse:TIMEOut:POLarity	Sets the polarity for the A pulse timeout trigger
TRIGger:A:PULse:TIMEOut:TIMe?	Returns the pulse timeout trigger time
TRIGger:A:PULse:TIMEOut:TIMe	Sets the pulse timeout trigger time
TRIGger:A:PULse:TRANsition?	Returns the delta time, polarity, and both upper and lower threshold limits for the transition time trigger
TRIGger:A:PULse:TRANsition:DeltaTime?	Returns the delta time used in calculating the transition value
TRIGger:A:PULse:TRANsition:DeltaTime	Sets the delta time used in calculating the transition value
TRIGger:A:PULse:TRANsition:POLarity?	Returns the polarity for the A pulse transition trigger
TRIGger:A:PULse:TRANsition:POLarity	Sets the polarity for the A pulse transition trigger
TRIGger:A:PULse:TRANsition:THReshold?	Returns the upper and lower threshold limits for the transition time trigger
TRIGger:A:PULse;TRANsition:THReshold :BOTh	Sets the upper and lower thresholds for the pulse transition trigger
TRIGger:A:PULse:TRANsition:THReshold :HIGH?	Returns the upper transition trigger threshold
TRIGger:A:PULse:TRANsition:THReshold :HIGH	Sets the upper transition trigger threshold
TRIGger:A:PULse:TRANsition:THReshold :LOW?	Returns the lower transition trigger threshold
TRIGger:A:PULse:TRANsition:THReshold :LOW	Sets the lower transition trigger threshold

TRIGger:A:PULse:TRANsition:WHEn?	Returns the relationship of delta time to transitioning signal
TRIGger:A:PULse:TRANsition:WHEn	Sets the relationship of delta time to transitioning signal
TRIGger:A:PULse:WIDth?	Returns the trigger A pulse width parameters
TRIGger:A:PULse:WIDth:HIGHLimit?	Returns the upper limit for the A pulse width trigger
TRIGger:A:PULse:WIDth:HIGHLimit	Sets the upper limit for the A pulse width trigger
TRIGger:A:PULse:WIDth:LOWLimit?	Returns the lower limit for the A pulse width trigger
TRIGger:A:PULse:WIDth:LOWLimit	Sets the lower limit for the A pulse width trigger
TRIGger:A:PULse:WIDth:POLarity?	Returns the polarity for the A pulse width trigger
TRIGger:A:PULse:WIDth:POLarity	Sets the polarity for the A pulse width trigger
TRIGger:A:PULse:WIDth:WHEn?	Returns the criteria for width specification of pulse width trigger events
TRIGger:A:PULse:WIDth:WHEn	Sets the criteria for width specification of pulse width trigger events
TRIGger:STATE?	Returns the current state of the triggering system
TRIGger:A:TYPe?	Returns the type of A trigger
TRIGger:A:TYPe	Sets the type of A trigger
TRIGger:B?	Returns the B trigger parameters
TRIGger:B	Sets the B trigger level to 50%
TRIGger:B:BY?	Returns B trigger delay qualifiers
TRIGger:B:BY	Sets B trigger time or event qualifiers
TRIGger:B:EDGE?	Returns B trigger edge type parameters
TRIGger:B:EDGE:COUPling?	Returns the type of B trigger coupling
TRIGger:B:EDGE:COUPling	Sets the type of B trigger coupling
TRIGger:B:EDGE:SLOpe?	Returns the B edge trigger slope
TRIGger:B:EDGE:SLOpe	Sets the B edge trigger slope
TRIGger:B:EDGE:SOUrce?	Returns the B edge trigger source
TRIGger:B:EDGE:SOUrce	Sets the B edge trigger source

TRIGger:B:EVENTS?	Returns the current B trigger events parameter
TRIGger:B:EVENTS:COUNt?	Returns the number of events that must occur before the B trigger occurs
TRIGger:B:EVENTS:COUNt	Sets the number of events that must occur before the B trigger occurs
TRIGger:B:LEVel?	Returns the level for the B trigger
TRIGger:B:LEVel	Sets the level for the B trigger
TRIGger:B:STATE?	Returns the state of the B trigger
TRIGger:B:STATE	Sets the state of the B trigger
TRIGger:B:TIMe?	Returns the B trigger delay time
TRIGger:B:TIMe	Sets the B trigger delay time
TRIGger:B:TYPe?	Returns the type of B trigger
TRIGger:B:TYPe	Sets the type of B trigger

TRIGger

Description

This command forces a trigger event to occur and the query returns current trigger parameters for the oscilloscope.

Group

Trigger

Syntax 1

```
TRIGger FORCe
```

Syntax 2

```
TRIGger?
```

Argument

- `FORCe`

  This creates a trigger event. If TRIGger:STATE is set to READy, the acquisition will complete. Otherwise, this command will be ignored. This is equivalent to selecting A Event (Main) Trigger Setup from the Trig menu and then clicking Force Trigger.

Example 1

```
TRIGger FORCe
```

This command forces a trigger event to occur.

Example 2

```
TRIGger?
```

This query might return `:TRIGGER:A:MODE AUTO;TYPE EDGE
;LEVEL 0.0000;HOLDOFF:BY DEFAULT;TIME 250.0000E-9;
:TRIGGER:A:EDGE:SOURCE CH1;COUPLING DC;SLOPE RISE;
:TRIGGER:A:LOGIC:CLASS PATTERN;FUNCTION AND;WHEN TRUE
;THRESHOLD:CH1 1.4000;CH2 1.4000;CH3 1.4000;CH4 1.4000;
:TRIGGER:A:LOGIC:INPUT:CH1 HIGH;CH2 X;CH3 X;
:TRIGGER:A:LOGIC:PATTERN:INPUT:CH4 X;:TRIGGER:A:LOGIC
:PATTERN:WHEN TRUE;WHEN:LESSLIMIT 5.0000E-9;MORELIMIT
5.0000E-9;:TRIGGER:A:LOGIC:SETHOLD:CLOCK:EDGE RISE
;THRESHOLD 1.4000;SOURCE CH2;:TRIGGER:A:LOGIC:SETHOLD
:DATA:THRESHOLD 1.4000;SOURCE CH1;:TRIGGER:A:LOGIC
:SETHOLD:HOLDTIME 2.0000E-9;SETTIME 3.0000E-9;:TRIGGER
:A:LOGIC:STATE:INPUT:CH4 RISE;:TRIGGER:A:LOGIC:STATE
:WHEN TRUE;:TRIGGER:A:PULSE:CLASS GLITCH;SOURCE CH1
;GLITCH:WIDTH 2.0000E-9;TRIGIF ACCEPT;POLARITY POSITIVE;
:TRIGGER:A:PULSE:RUNT:POLARITY POSITIVE;THRESHOLD:HIGH
1.2000;LOW 800.0000E-3;:TRIGGER:A:PULSE:RUNT:WHEN OCCURS
;WIDTH 2.0000E-9;:TRIGGER:A:PULSE:TRANSITION:DELTATIME
2.0000E-9;POLARITY POSITIVE;THRESHOLD:HIGH 1.2000;LOW
800.0000E-3;:TRIGGER:A:PULSE:TRANSITION:WHEN SLOWERTHAN;
:TRIGGER:A:PULSE:WIDTH:LOWLIMIT 2.0000E-9;HIGHLIMIT
2.0000E-9;WHEN WITHIN;POLARITY POSITIVE;:TRIGGER:A
:PULSE:TIMEOUT:POLARITY STAYSHIGH;TIME 2.0000E-9;
:TRIGGER:B:STATE 0;TYPE EDGE;LEVEL 0.0000;BY EVENTS
;EDGE:SOURCE CH1;SLOPE RISE;COUPLING DC;:TRIGGER:B
:TIME 16.0000E-9;EVENTS:COUNT 2`

TRIGger:A

Description

This command sets the A trigger level automatically to 50% of the minimum/maximum value of the trigger input signal. The query returns current A trigger parameters. TRIGger:A? is a composite of TRIGger:A:EDGE?, TRIGger:A:LOGIc?, and TRIGger:A:PULSE? The trigger level is the voltage threshold through which the trigger source signal must pass to generate a trigger event. This command is equivalent to pushing the **LEVEL** knob on the front-panel.

Group

Trigger

Related Commands

TRIGger:A:EDGE? (see page 345), TRIGger:A:LOGIc? (see page 354), TRIGger:A:PULSE? (see page 380)

Syntax 1

```
TRIGger:A SETLevel
```

Syntax 2

```
TRIGger:A?
```

Argument

- `SETLevel`

  This sets the A trigger level to 50% of minimum and maximum.

Example 1

```
TRIGger:A SETLevel
```

This command sets the A trigger level to 50% of minimum and maximum.

Example 2

```
TRIGger:A?
```

This query might return

```
:TRIGGER:A:MODE AUTO;TYPE EDGE
;LEVEL 0.0000;HOLDOFF:BY DEFAULT;TIME 250.0000E-9;
:TRIGGER:A:EDGE:SOURCE CH1;COUPLING DC;SLOPE RISE;
:TRIGGER:A:LOGIC:CLASS PATTERN;FUNCTION AND;WHEN TRUE
;THRESHOLD:CH1 1.4000;CH2 1.4000
;CH3 1.4000;CH4 1.4000;:TRIGGER:A:LOGIC:INPUT:CH1 HIGH
;CH2 X;CH3 X;:TRIGGER:A:LOGIC:PATTERN:INPUT:CH4 X;
:TRIGGER:A:LOGIC:PATTERN:WHEN TRUE;WHEN:LESSLIMIT
5.0000E-9;MORELIMIT 5.0000E-9;:TRIGGER:A:LOGIC:SETHOLD
:CLOCK:EDGE RISE;THRESHOLD 1.4000;SOURCE CH2;:TRIGGER
:A:LOGIC:SETHOLD:DATA:THRESHOLD 1.4000;SOURCE CH1;
:TRIGGER:A:LOGIC:SETHOLD:HOLDTIME 2.0000E-9;SETTIME
3.0000E-9;:TRIGGER:A:LOGIC:STATE:INPUT:CH4 RISE;
:TRIGGER:A:LOGIC:STATE:WHEN TRUE;:TRIGGER:A:PULSE:CLASS
GLITCH;SOURCE CH1;GLITCH:WIDTH 2.0000E-9;TRIGIF ACCEPT
;POLARITY POSITIVE;:TRIGGER:A:PULSE:RUNT:POLARITY
POSITIVE;THRESHOLD:HIGH 1.2000;LOW 800.0000E-3;:TRIGGER
:A:PULSE:RUNT:WHEN OCCURS;WIDTH 2.0000E-9;:TRIGGER:A
:PULSE:TRANSITION:DELTATIME 2.0000E-9;POLARITY POSITIVE
;THRESHOLD:HIGH 1.2000;LOW 800.0000E-3;:TRIGGER:A:PULSE
:TRANSITION:WHEN SLOWERTHAN;:TRIGGER:A:PULSE:WIDTH
:LOWLIMIT 2.0000E-9;HIGHLIMIT 2.0000E-9;WHEN WITHIN
;POLARITY POSITIVE;:TRIGGER:A:PULSE:TIMEOUT:POLARITY
STAYSHIGH;TIME 2.0000E-9
```

TRIGger:A:EDGE?

Description

This query-only command returns the trigger source, coupling and slope for the A edge trigger. This command is equivalent to selecting Edge Setup from the Trig menu and then viewing the current setups.

Group

Trigger

Related Commands

TRIGger:A:PULse? (see page 380), TRIGger:A:LOGIc? (see page 354)

Syntax

```
TRIGger:A:EDGE?
```

Example

```
TRIGger:A:EDGE?
```

This query might return `:TRIGGER:A:EDGE:SOURCE CH1;COUPLING DC;SLOPE RISE`, indicating the trigger source, coupling and slope for the A edge trigger.

TRIGger:A:EDGE:COUPling

Description

This command sets or queries the type of coupling for the A edge trigger. This command is equivalent to selecting A Event (Main) Trigger Setup from the Trig menu and then choosing from the Coupling drop-down list.

Group

Trigger

Related Commands

TRIGger:A:EDGE:SOUrce (see page 348), TRIGger:A:EDGE:SLOpe (see page 347)

Syntax 1

```
TRIGger:A:EDGE:COUPling {AC|DC|HFRej|LFRej|NOISErej}
```

Syntax 2

```
TRIGger:A:EDGE:COUPling?
```

Arguments

- `AC`

  This selects AC trigger coupling.

- `DC`

  This selects DC trigger coupling.

- `HFRej`

  This coupling removes the high frequency components of the DC signal.

- `LFRej`

  This coupling removes the low frequency components of the AC signal.

- `NOISErej`

  This selects DC low sensitivity. It requires added signal amplitude for more stability and less false triggering.

Example 1

```
TRIGger:A:EDGE:COUPling DC
```

This command sets the A edge trigger coupling to DC.

Example 2

```
TRIGger:A:EDGE:COUPling?
```

This query might return `:TRIGGER:A:EDGE:COUPLING DC`, indicating that the A edge trigger coupling is set to DC.

TRIGger:A:EDGE:SLOpe

Description

This command sets or queries the slope for the A edge trigger. This command is equivalent to selecting A Event (Main) Trigger Setup from the Trig menu and then choosing the desired Slope.

Group

Trigger

Related Commands

TRIGger:A:EDGE:SOUrce (see page 348), TRIGger:A:EDGE:COUPling (see page 346)

Syntax 1

```
TRIGger:A:EDGE:SLOpe {RISe|FALL}
```

Syntax 2

```
TRIGger:A:EDGE:SLOpe?
```

Arguments

- `RISe`

  This specifies to trigger on the rising or positive edge of a signal.

- `FALL`

  This specifies to trigger on the falling or negative edge of a signal.

Example 1

```
TRIGger:A:EDGE:SLOpe?
```

This query might return `:TRIGGER:A:EDGE:SLOPE FALL`, indicating that the A edge trigger slope is negative.

Example 2

```
TRIGger:A:EDGE:SLOpe RISe
```

This command sets the A edge trigger slope to positive, which triggers on the rising edge of the signal.

TRIGger:A:EDGE:SOUrce

Description

This command sets or queries the source for the A edge trigger. This command is equivalent to selecting A Event (Main) Trigger Setup from the Trig menu and then choosing from the Source drop-down list.

Group

Trigger

Related Commands

TRIGger:A:EDGE:SLOpe (see page 347), TRIGger:A:EDGE:COUPling (see page 346)

Syntax 1

```
TRIGger:A:EDGE:SOUrce {AUXiliary|CH<x>|LINE}
```

Syntax 2

```
TRIGger:A:EDGE:SOUrce?
```

Arguments

- `AUXiliary`

  This specifies an external trigger using the Auxiliary Trigger Input connector located on the rear panel of the oscilloscope.

- `CH<x>`

  This specifies one input channel as the A edge trigger source.

- `LINE`

  This specifies AC line voltage.

Example 1

```
TRIGger:A:EDGE:SOUrce?
```

This query might return `:TRIGGER:A:EDGE:SOURCE CH1`, indicating that channel 1 is the A edge trigger source.

Example 2

```
TRIGger:A:EDGE:SOUrce CH1
```

This command specifies channel 1 as the A edge trigger source.

TRIGger:A:HOLDoff?

Description

This query-only command returns the A trigger holdoff parameters. These parameters specify the time period during which the trigger circuitry is not looking to generate a trigger event. This command is equivalent to selecting Holdoff from the Trig menu and then viewing the current settings.

Group

Trigger

Related Commands

TRIGger:A:HOLDoff:ACTUal? (see page 350), TRIGger:A:HOLDoff:BY (see page 351), TRIGger:A:HOLDoff:TIMe (see page 352)

Syntax

```
TRIGger:A:HOLDoff?
```

Example

```
TRIGger:A:HOLDoff?
```

This query might return `:TRIGGER:A:HOLDOFF:TIME 900.0000E-09;BY DEFAULT`, indicating that the A edge trigger holdoff time is set 900 ns.

TRIGger:A:HOLDoff:ACTUal?

Description

This query-only command returns the holdoff time actually used (expressed in seconds) by the A trigger. This command is equivalent to selecting Holdoff from the Trig menu and then viewing the current Trig Holdoff value.

Group

Trigger

Related Commands

TRIGger:A:HOLDoff? (see page 349), TRIGger:A:HOLDoff:BY (see page 351), TRIGger:A:HOLDoff:TIMe (see page 352)

Syntax

```
TRIGger:A:HOLDoff:ACTUal?
```

Example

```
TRIGger:A:HOLDoff:ACTUal?
```

This query might return `:TRIGGER:A:HOLDOFF:ACTUAL 4.0000E-06`, showing that the holdoff time is set to 4 μs.

TRIGger:A:HOLDoff:BY

Description

This command sets or queries the type of holdoff for the A trigger. Holdoff types are expressed as either user-specified time (TIMe) or by an internally calculated minimum time value (DEFAult). This command is equivalent to selecting Holdoff from the Trig menu and then viewing or setting the Holdoff type.

Group

Trigger

Related Commands

TRIGger:A:HOLDoff:TIMe (see page 352)

Syntax 1

```
TRIGger:A:HOLDoff:BY {TIMe|DEFAult}
```

Syntax 2

```
TRIGger:A:HOLDoff:BY?
```

Arguments

- `TIMe`

  This enables you to set the holdoff time via the TRIGger:A:HOLDoff:TIMe command.

- `DEFAult`

  This automatically calculates a holdoff time to use. This time is typically equivalent to the greater of 1/2 screen (5 divisions) of time or 250 ns. The maximum value is 12 s. For example, if the oscilloscope is set to 1 ms/division then the default holdoff will be 1 ms/division x 25 divisions = 25 ms.

Example 1

```
TRIGger:A:HOLDoff:BY?
```

This query might return `:TRIGGER:A:HOLDOFF:BY TIME`, indicating that you will set the holdoff time.

Example 2

```
TRIGger:A:HOLDoff:BY TIMe
```

This command sets the holdoff to the "by time" setting. This enables you to set the holdoff time.

TRIGger:A:HOLDoff:TIMe

Description

This command sets or queries the A trigger holdoff time. This command is equivalent to selecting Holdoff from the Trig menu and then choosing the desired Trig Holdoff.

Group

Trigger

Related Commands

TRIGger:A:HOLDoff:BY (see page 351)

Syntax 1

```
TRIGger:A:HOLDoff:TIMe <NR3>
```

Syntax 2

```
TRIGger:A:HOLDoff:TIMe?
```

Argument

- `<NR3>`

  This specifies the holdoff time in seconds. The range is from 250 ns through 12.0 s.

Example 1

```
TRIGger:A:HOLDoff:TIME?
```

This query might return `:TRIGGER:A:HOLDOFFTIME 1.2000E-06`, indicating that the A trigger holdoff time is set to 1.2 µs.

Example 2

```
TRIGger:A:HOLDoff:TIMe 10
```

This command sets the trigger A holdoff time to 10 s.

TRIGger:A:LEVel

Description

This command sets or queries the level for the A trigger. This command is equivalent to selecting Holdoff from the Trig menu and then viewing or setting the trigger Level.

Group

Trigger

Syntax 1

```
TRIGger:A:LEVel {ECL|TTL|<NR3>}
```

Syntax 2

```
TRIGger:A:LEVel?
```

Arguments

- `ECL`

  This specifies the ECL high level.

- `TTL`

  This specifies the TTL high level.

- `<NR3>`

  This specifies the trigger level in user units (usually volts).

Example 1

```
TRIGger:A:LEVel?
```

This query might return `:TRIGGER:A:LEVel 1.3000E+00`, indicating that the A edge trigger is set to 1.3 V.

Example 2

```
TRIGger:A:LEVel TTL
```

This command sets the A edge trigger to TTL high level, which is 1.4 V.

TRIGger:A:LOGIc?

Description

This query-only command returns all of the A logic trigger parameters.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:CLAss (see page 355)

Syntax

```
TRIGger:A:LOGic?
```

Example

```
TRIGger:A:LOGic?
```

This query might return `:TRIGGER:A:LOGIC:CLASS PATTERN ;FUNCTION AND;WHEN TRUE;THRESHOLD:CH1 1.4000;CH2 1.4000 ;CH3 1.4000;CH4 1.4000;:TRIGGER:A:LOGIC:INPUT:CH1 HIGH ;CH2 X;CH3 X;:TRIGGER:A:LOGIC:PATTERN:INPUT:CH4 X; :TRIGGER:A:LOGIC:PATTERN:WHEN TRUE;WHEN:LESSLIMIT 5.0000E-9;MORELIMIT 5.0000E-9;:TRIGGER:A:LOGIC:SETHOLD :CLOCK:EDGE RISE;THRESHOLD 1.4000;SOURCE CH2;:TRIGGER:A :LOGIC:SETHOLD:DATA:THRESHOLD 1.4000;SOURCE CH1; :TRIGGER:A:LOGIC:SETHOLD:HOLDTIME 2.0000E-9;SETTIME 3.0000E-9;:TRIGGER:A:LOGIC:STATE:INPUT:CH4 RISE;:TRIGGER :A:LOGIC:STATE:WHEN TRUE`

TRIGger:A:LOGIc:CLAss

Description

This command sets or queries the class of the Logic Trigger. Used in concert with TRIGger:A:TYPe, this command is equivalent to selecting Logic Pattern, Logic State or Setup/Hold Setup from the Trig menu.

Group

Trigger

Related Commands

TRIGger:A:TYPe (see page 412), TRIGger:A:PULse:CLAss (see page 381)

Syntax 1

```
TRIGger:A:LOGIc:CLAss {PATtern|STATE|SETHold}
```

Syntax 2

```
TRIGger:A:LOGIc:CLAss?
```

Arguments

- `PATtern`

  This means that the oscilloscope triggers when the specified logical combinations of channels 1, 2, 3 and 4 are met.

- `STATE`

  This means that the oscilloscope triggers when the specified conditions of channels 1, 2, and 3 are met after the channel 4 condition is met.

- `SETHold`

  This means that the oscilloscope will trigger on the setup and hold violations between a data source and a clock source.

Example 1

```
TRIGger:A:TYPe LOGIc
TRIGger:A:LOGIc:CLAss?
```

This query might return `:TRIGGER:A:LOGIC:CLASS PATTERN`

Example 2

```
TRIGger:A:LOGIc:CLAss PATTERN
```

This command sets the trigger A logic class to PATtern, which causes the oscilloscope to trigger when the specified logical combinations of channels 1, 2, 3, and 4 are met.

TRIGger:A:LOGIc:FUNCtion

Description

This command sets or queries the logical combination of the input channels for the A pattern and A state logic triggers. This command is equivalent to selecting A Event (Main) Trigger Setup from the Trig menu and then setting or viewing the Pattern Type.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:PATtern:WHEn (see page 361), TRIGger:A:LOGIc:INPut:CH<x> (see page 358), TRIGger:A:LOGIc:THReshold:CH<x> (see page 378)

Syntax 1

```
TRIGger:A:LOGIc:FUNCtion {AND|NANd|NOR|OR}
```

Syntax 2

```
TRIGger:A:LOGIc:FUNCtion?
```

Arguments

- `AND`

  This specifies to trigger if all conditions are true.

- `NANd`

  This specifies to trigger if any of the conditions are false.

- `NOR`

  This specifies to trigger if all conditions are false.

- `OR`

  This specifies to trigger if any of the conditions are true.

Example 1

```
TRIGger:A:LOGIc:FUNCTion?
```

This query might return `:TRIGGER:A:LOGIC:FUNCTION NAND`

Example 2

```
TRIGger:A:LOGIc:FUNCTion AND
```

This command sets the logical combination of channels to be true when all conditions are true.

TRIGger:A:LOGIc:INPut?

Description

This query-only command returns the A logic trigger input expected for channel 1, 2, and 3. Channel 4 is set or queried with the command TRIGger:A:LOGIc:PATtern:INPut:CH4. This command is equivalent to selecting A Event (Main) Trigger Setup and then viewing or setting the Input Threshold for channel 1 through 3.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:PATtern:INPut:CH4 (see page 360)

Syntax

```
TRIGger:A:LOGIc:INPut?
```

Example

```
TRIGger:A:LOGIc:INPut?
```

This query might return `:TRIGGER:A:LOGIC:INPUT:CH1 HIGH;CH2 X;CH3 X`

TRIGger:A:LOGIc:INPut:CH<x>

Description

This command sets or queries the A logical input for the specified logic trigger channel, which ranges from CH1 through CH3. Note that CH4 cannot be set or queried with this command. For details about setting this channel, see TRIGger:A:LOGIc:PATtern:INPut:CH4. This command is equivalent to selecting A Event (Main) Trigger Setup from the Trig menu and then choosing the desired logical input from the Ch<x> drop-down list, which is located in the Input Threshold group box.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:PATtern:INPut:CH4 (see page 360)

Syntax 1

```
TRIGger:A:LOGIc:INPut:CH<x> {HIGH|LOW|X}
```

Syntax 2

```
TRIGger:A:LOGIc:INPut:CH<x>?
```

Arguments

- `HIGH`

  This specifies the logic high.

- `LOW`

  This specifies the logic low.

- `X`

  This specifies a "do not care" state.

Example 1

```
TRIGger:A:LOGIc:INPut:CH1?
```

This query might return `:TRIGGER:LOGIC:INPUT:CH1 X`, indicating that the setting for the A logic trigger input to channel 1 does not matter.

Example 2

```
TRIGger:A:LOGIc:INPut:CH2 HIGH
```

This command sets the A logic trigger input to logic HIGH for channel 2.

TRIGger:A:LOGIc:PATtern?

Description

This query-only command returns the conditions used for generating an A logic pattern trigger, with respect to the defined input pattern, and identifies the maximum and minimum time that the selected pattern may be true and still generate the trigger. This command is equivalent to selecting Logic Pattern from the Trig menu and then viewing the current setups.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:PATtern:INPut:CH4 (see page 360), TRIGger:A:LOGIc:PATtern:WHEn (see page 361), TRIGger:A:LOGIc:PATtern:WHEn:LESSLimit (see page 362), TRIGger:A:LOGIc:PATtern:WHEn:MORELimit (see page 363)

Syntax

```
TRIGger:A:LOGIc:PATtern?
```

Example

```
TRIGger:A:LOGIc:PATtern?
```

This query might return `:TRIGGER:A:LOGIC:PATTERN:INPUT:CH4 X;:TRIGGER:A:LOGIC:PATTERN:WHEN TRUE;WHEN:LESSLIMIT 5.0000E-9;MORELIMIT 5.0000E-9`.

TRIGger:A:LOGIc:PATtern:INPut:CH4

Description

This command sets or queries the A logic trigger input for channel 4. This command specifies the logic value used when the pattern trigger detects the threshold level. This command is equivalent to selecting Logic Pattern from the Trig menu and then choosing the desired logical input from the Ch4 drop-down list, which is located in the Input Threshold group box.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:FUNCtion (see page 356), TRIGger:A:LOGIc:INPut:CH<x> (see page 358), TRIGger:A:LOGIc:THReshold:CH<x> (see page 378)

Syntax 1

```
TRIGger:A:LOGIc:PATtern:INPut:CH4 {HIGH|LOW|X}
```

Syntax 2

```
TRIGger:A:LOGIc:PATtern:INPut:CH4?
```

Arguments

- `HIGH`

  This specifies the logic high.

- `LOW`

  This specifies the logic low.

- `X`

  This specifies a "do not care" state.

Example 1

```
TRIGger:A:LOGIc:PATtern:INPut:CH4?
```

This query might return `:TRIGGER:A:LOGIC:PATTERN:INPUT:CH4 HIGH`, indicating that the logic input for channel 4 is logic high.

Example 2

```
TRIGger:A:LOGIc:PATtern:INPut:CH4 HIGH
```

This command sets the A logic trigger input to logic high for channel 4 when the logic class is set to PATtern. When the threshold level is detected, High places a 1 on the channel 4 input to the selected function.

TRIGger:A:LOGIc:PATtern:WHEn

Description

This command sets or queries the condition for generating an A logic pattern trigger with respect to the defined input pattern. This command is equivalent to selecting A Event (Main) Trigger Setup from the Trig menu and then choosing a trigger condition from the Pattern drop-down list, which is located in the Trigger When group box.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:FUNCtion (see page 356), TRIGger:A:LOGIc:INPut? (see page 357), TRIGger:A:LOGIc:THReshold? (see page 377)

Syntax 1

```
TRIGger:A:LOGIc:PATtern:WHEn {TRUe|FALSe|LESSThan|MOREThan}
```

Syntax 2

```
TRIGger:A:LOGIc:PATtern:WHEn?
```

Arguments

- `TRUe`

  This specifies to trigger when the pattern becomes true.

- `FALSe`

  This specifies to trigger when the pattern becomes false.

- `LESSThan`

  This specifies to trigger if the specific pattern is true less than the specified LESSLimit.

- `MOREThan`

  This specifies to trigger if the specific pattern is true longer than the specified MORELimit.

Example 1

```
TRIGger:A:LOGIc:PATtern:WHEn?
```

This query might return `:TRIGGER:A:LOGIC:PATTERN:WHEN TRUE`, indicating that the A logic pattern will trigger when the pattern becomes true.

Example 2

```
TRIGger:A:LOGIc:PATtern:WHEn FALSe
```

This command specifies to trigger the A logic pattern when the pattern becomes false.

TRIGger:A:LOGIc:PATtern:WHEn:LESSLimit

Description

This command sets or queries the maximum time that the selected pattern may be true and still generate an A logic pattern trigger. This command is equivalent to selecting A Event (Main) Trigger Setup from the Trig menu and then entering the following Trigger When settings: choose Less Than from the Pattern drop-down list, then enter a maximum value for Time.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:PATtern:WHEn:MORELimit (see page 363)

Syntax 1

```
TRIGger:A:LOGIc:PATtern:WHEn:LESSLimit <NR3>
```

Syntax 2

```
TRIGger:A:LOGIc:PATtern:WHEn:LESSLimit?
```

Argument

- `<NR3>`

  This specifies the amount of time to hold pattern true.

Example 1

```
TRIGger:A:LOGIc:PATtern:WHEn:LESSLimit?
```

This query might return `:TRIGGER:A:LOGIC:PATTERN:WHEN:LESSLIMIT 5.0000E-09`, indicating that the selected pattern may hold true for up to 5 ns and still generate an A logic pattern trigger.

Example 2

```
TRIGger:A:LOGIc:PATtern:WHEn:LESSLimit 10.0E+00
```

This command sets the maximum time that the selected pattern may hold true (and generate an A logic pattern trigger) to 10 s.

TRIGger:A:LOGIc:PATtern:WHEn:MORELimit

Description

This command sets or queries the minimum time that the selected pattern may be true and still generate an A logic pattern trigger. This command is equivalent to selecting A Event (Main) Trigger Setup from the Trig menu and then entering the following Trigger When settings: choose More Than from the Pattern drop-down list, then enter a minimum value for Time.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:PATtern:WHEn:LESSLimit (see page 362)

Syntax 1

```
TRIGger:A:LOGIc:PATtern:WHEn:MORELimit <NR3>
```

Syntax 2

```
TRIGger:A:LOGIc:PATtern:WHEn:MORELimit?
```

Argument

- `<NR3>`

  This specifies the amount of time to hold pattern true.

Example 1

```
TRIGger:A:LOGIc:PATtern:WHEn:MORELimit?
```

This query might return `:TRIGGER:A:LOGIC:PATTERN:WHEN:MORELIMIT 5.0000E-09`, indicating that the selected pattern must hold true for at least 5 ns to generate an A logic pattern trigger.

Example 2

```
TRIGger:A:LOGIc:PATtern:WHEn:MORELimit 10.0E+00
```

This command sets the minimum time that the selected pattern may hold true (and generate an A logic pattern trigger) to 10 s.

TRIGger:A:LOGIc:SETHold?

Description

This query-only command returns the clock edge polarity, voltage threshold and source input; data voltage threshold and source; and both setup and hold times for setup and hold violation triggering. This command is equivalent to selecting Setup/Hold Setup from the Trig menu and then viewing the current setups.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:PATtern? (see page 359), TRIGger:A:LOGIc:STATE? (see page 374)

Syntax

```
TRIGger:A:LOGIc:SETHold?
```

Example

```
TRIGger:A:LOGIc:SETHold?
```

This query might return `:TRIGGER:A:LOGIC:SETHOLD:CLOCK:EDGE RISE ;THRESHOLD 1.4000;SOURCE CH2;:TRIGGER:A:LOGIC:SETHOLD:DATA :THRESHOLD 1.4000;SOURCE CH1;:TRIGGER:A:LOGIC:SETHOLD :HOLDTIME 2.0000E-9;SETTIME 3.0000E-9`

TRIGger:A:LOGIc:SETHold:CLOCk?

Description

This query-only command returns the clock edge polarity, voltage threshold and source input for setup and hold triggering. This command is equivalent to selecting Setup/Hold Setup from the Trig menu and then viewing the current clock setups.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:SETHold:DATa? (see page 369), TRIGger:A:LOGIc:SETHold:CLOCk:EDGE (see page 366), TRIGger:A:LOGIc:SETHold:CLOCk:THReshold (see page 368), TRIGger:A:LOGIc:SETHold:CLOCk:SOUrce (see page 367)

Syntax

```
TRIGger:A:LOGIc:SETHold:CLOCk?
```

Example

```
TRIGger:A:LOGIc:SETHold:CLOCk?
```

This query might return `:TRIGGER:A:LOGIc:SETHold:CLOCk:EDGE RISE;THRESHOLD 1.4000;SOURCE CH2`, indicating the current clock settings for setup and hold triggering.

TRIGger:A:LOGIc:SETHold:CLOCk:EDGE

Description

This command sets or queries the clock edge polarity for setup and hold triggering. This is equivalent to selecting Setup/Hold Setup from the Trig menu and then choosing the desired Clock Edge.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:SETHold:CLOCk:SOUrce (see page 367),
TRIGger:A:LOGIc:SETHold:CLOCk:THReshold (see page 368)

Syntax 1

```
TRIGger:A:LOGIc:SETHold:CLOCk:EDGE {FALL|RISe}
```

Syntax 2

```
TRIGger:A:LOGIc:SETHold:CLOCk:EDGE?
```

Arguments

- `FALL`

  This specifies polarity as the clock falling edge.

- `RISe`

  This specifies polarity as the clock rising edge.

Example 1

```
TRIGger:A:LOGIc:SETHold:CLOCk:EDGE?
```

This query might return `:TRIGGER:A:LOGIC:SETHOLD:CLOCK:EDGE RISE`, indicating that polarity is specified as the clock rising edge.

Example 2

```
TRIGger:A:LOGIc:SETHold:CLOCk:EDGE RISE
```

This command specifies the polarity as the clock rising edge.

TRIGger:A:LOGIc:SETHold:CLOCk:SOUrce

Description

This command sets or queries the clock source for the A logic trigger setup and hold input. The channel is specified by x, which ranges from 1 through 4. This is equivalent to selecting A Event (Main) Trigger Setup from the Trig menu and then choosing the desired channel from the Clock Source drop-down list.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:SETHold:CLOCk:EDGE (see page 366),
TRIGger:A:LOGIc:SETHold:CLOCk:THReshold (see page 368)

Syntax 1

```
TRIGger:A:LOGIc:SETHold:CLOCk:SOUrce CH<x>
```

Syntax 2

```
TRIGger:A:LOGIc:SETHold:CLOCk:SOUrce?
```

Argument

- `CH<x>`

  This specifies the input channel, which ranges from 1 through 4.

Example 1

```
TRIGger:A:LOGIc:SETHold:CLOCk:SOUrce?
```

This query might return `:TRIGGER:A:LOGIC:SETHOLD:CLOCK:SOURCE CH4`, indicating that channel 4 is the clock source for the A logic trigger's setup and hold input.

Example 2

```
TRIGger:A:LOGIc:SETHold:CLOCk:SOUrce CH1
```

This command specifies channel 1 as the A logic setup and hold input.

TRIGger:A:LOGIc:SETHold:CLOCk:THReshold

Description

This command sets or queries the clock voltage threshold for setup and hold trigger. This command is equivalent to selecting Setup/Hold Setup from the Trig menu and then setting the desired Clock Level.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:SETHold:CLOCk:EDGE (see page 366), TRIGger:A:LOGIc:SETHold:CLOCk:SOUrce (see page 367)

Syntax 1

```
TRIGger:A:LOGIc:SETHold:CLOCk:THReshold {ECL|TTL|<NR3>}
```

Syntax 2

```
TRIGger:A:LOGIc:SETHold:CLOCk:THReshold?
```

Arguments

- `ECL`

  This specifies a preset ECL high level of -1.3 V.

- `TTL`

  This specifies a preset TTL high level of 1.4 V.

- `<NR3>`

  This is the clock level, in volts.

Example 1

```
TRIGger:A:LOGIc:SETHold:CLOCk:THReshold?
```

This query might return `:TRIGGER:A:LOGIC:SETHOLD:CLOCK:THRESHOLD 1.2000E+00`, indicating that the clock threshold for setup and hold trigger is 1.2 V.

Example 2

```
TRIGger:A:LOGIc:SETHold:CLOCk:THReshold TTL
```

This command specifies the preset TTL value of 1.4 V as the clock threshold for setup and hold trigger.

TRIGger:A:LOGIc:SETHold:DATa?

Description

This query-only command returns the voltage threshold and data source for setup and hold trigger. This command is equivalent to selecting Setup/Hold Setup from the Trig menu and then viewing the current data setups.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:SETHold:CLOCk? (see page 365)

Syntax

```
TRIGger:A:LOGIc:SETHold:DATa?
```

Example

```
TRIGger:A:LOGIc:SETHold:DATa?
```

This query might return `:TRIGGER:A:LOGIC:SETHOLD:DATA:THRESHOLD 1.4000;SOURCE CH1`, indicating the current trigger data settings.

TRIGger:A:LOGIc:SETHold:DATa:THReshold

Description

This command sets or queries the data voltage threshold for setup and hold trigger. This command is equivalent to selecting A Event (Main) Trigger Setup from the Trig menu and then setting the desired Data Level.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:SETHold:DATa:SOUrce (see page 371)

Syntax 1

```
TRIGger:A:LOGIc:SETHold:DATa:THReshold {ECL|TTL<NR3>}
```

Syntax 2

```
TRIGger:A:LOGIc:SETHold:DATa:THReshold?
```

Arguments

- `ECL`

  This specifies the preset ECL high level of -1.3 V.

- `TTL`

  This specifies the preset TTL high level of 1.4 V.

- `<NR3>`

  This is the setup and hold data level, in V.

Example 1

```
TRIGger:A:LOGIc:SETHold:DATa:THReshold?
```

This query might return `:TRIGGER:A:LOGIC:SETHOLD:DATA:THRESHOLD 1.2000E+00`, indicating that 1.2 V is the current data voltage level for setup and hold trigger.

Example 2

```
TRIGger:A:LOGIc:SETHold:DATa:THReshold TTL
```

This command specifies the preset ECL high level of 1.4 V as the current data voltage level for setup and hold trigger.

TRIGger:A:LOGIc:SETHold:DATa:SOUrce

Description

This command sets or queries the data source for setup and hold trigger. This command is equivalent to selecting A Event (Main) Trigger Setup from the Trig menu and then choosing the desired channel from the Data Source drop-down list.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:SETHold:DATa:THReshold (see page 370)

Syntax 1

```
TRIGger:A:LOGIc:SETHold:DATa:SOUrce CH<x>
```

Syntax 2

```
TRIGger:A:LOGIc:SETHold:DATa:SOUrce?
```

Argument

- `CH<x>`

  This specifies the input channel, which ranges from 1 through 4.

Example 1

```
TRIGger:A:LOGIc:SETHold:DATa:SOUrce?
```

This query might return `:TRIGGER:A:LOGIC:SETHOLD:DATA:SOURCE CH2`, indicating that channel 2 is the current clock source for setup and hold trigger.

Example 2

```
TRIGger:A:LOGIc:SETHold:DATa:SOUrce CH1
```

This command sets channel 1 as the clock source for setup and hold trigger.

TRIGger:A:LOGIc:SETHold:HOLDTime

Description

This command sets or queries the hold time for setup and hold violation triggering. This command is equivalent to selecting Setup/Hold Setup from the Trig menu and then setting the desired Hold Time.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:SETHold:SETTime (see page 373)

Syntax 1

```
TRIGger:A:LOGIc:SETHold:HOLDTime <NR3>
```

Syntax 2

```
TRIGger:A:LOGIc:SETHold:HOLDTime?
```

Argument

- `<NR3>`

  This specifies the hold time setting in seconds. Positive values for hold time occur after the clock edge. Negative values occur before the clock edge.

Example 1

```
TRIGger:A:LOGIc:SETHold:HOLDTime?
```

This query might return `:TRIGGER:A:LOGIC:SETHOLD:HOLDTIME 2.0000E-09`, indicating that the current hold time for setup and hold trigger is 2 ns.

Example 2

```
TRIGger:A:LOGIc:SETHold:HOLDTime 3.0E-3
```

This command sets the hold time for A logic setup and hold trigger to 3 ms.

TRIGger:A:LOGIc:SETHold:SETTime

Description

This command sets or queries the setup time for setup and hold violation triggering. This command is equivalent to selecting Setup/Hold Setup from the Trig menu and then setting the desired Hold Time.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:SETHold:HOLDTime (see page 372)

Syntax 1

```
TRIGger:A:LOGIc:SETHold:SETTime <NR3>
```

Syntax 2

```
TRIGger:A:LOGIc:SETHold:SETTime?
```

Argument

- `<NR3>`

  This specifies the setup time for setup and hold violation triggering.

Example 1

```
TRIGger:A:LOGIc:SETHold:SETTime?
```

This query might return `:TRIGGER:A:LOGIC:SETHOLD:SETTIME 2.0000E-09`, indicating that the current hold time for setup and hold trigger is 2 ns.

Example 2

```
TRIGger:A:LOGIc:SETHold:SETTime 3.0E-6
```

This command specifies that the current hold time for setup and hold trigger is 3 μs.

TRIGger:A:LOGIc:STATE?

Description

This query-only command returns the data input and trigger criteria for the A logic trigger. This command is equivalent to selecting Logic State from the Trig menu and then viewing the current logic state settings.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:STATE:INPut:CH4 (see page 375), TRIGger:A:LOGic:STATE:WHEn (see page 376)

Syntax

```
TRIGger:A:LOGIc:STATE?
```

Example

```
TRIGger:A:LOGIc:STATE?
```

This query might return `:TRIGGER:A:LOGIC:STATE:INPUT:CH4 RISE;`
`:TRIGGER:A:LOGIC:STATE:WHEN TRUE`

TRIGger:A:LOGIc:STATE:INPut:CH4

Description

This command sets or queries the slope for channel 4 when the logic class is set to STATE. This command is equivalent to selecting Logic State from the Trig menu and then choosing the desired channel input (NEG or POS) from the Ch4 drop-down list.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:STATE:WHEn (see page 376)

Syntax 1

```
TRIGger:A:LOGIc:STATE:INPut:CH4 {FALL|RISe}
```

Syntax 2

```
TRIGger:A:LOGIc:STATE:INPut:CH4?
```

Arguments

- `FALL`

  This specifies falling edge.

- `RISe`

  This specifies rising edge.

Example 1

```
TRIGger:A:LOGIc:STATE:INPut:CH4?
```

This query might return `:TRIGGER:A:LOGIC:STATE:INPUT:CH4 RISE`, indicating that the A logic trigger input for channel 4 is the rising edge.

Example 2

```
TRIGger:A:LOGIc:STATE:INPut:CH4 RISE
```

This command specifies that the A logic trigger input for channel 4 is the rising edge.

TRIGger:A:LOGIc:STATE:WHEn

Description

This command sets or queries the condition for generating an A logic state trigger. This command is equivalent to selecting Logic State from the Trig menu and then choosing the desired condition from the Trigger When Pattern drop-down list.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:INPut:CH<x> (see page 358), TRIGger:A:LOGIc:STATE:INPut:CH4 (see page 375)

Syntax 1

```
TRIGger:A:LOGIc:STATE:WHEn {TRUe|FALSe}
```

Syntax 2

```
TRIGger:A:LOGIc:STATE:WHEn?
```

Arguments

- `TRUe`

  This specifies that the trigger occurs when the clock transition on channel 4 occurs and the pattern of channels 1-3 are at the desired logic input states.

- `FALSe`

  This specifies that the trigger occurs when the desired clock transition on channel 4 occurs and the desired logic input states on channels 1-3 are not found.

Example 1

```
TRIGger:A:LOGIc:STATE:WHEn?
```

This query might return `:TRIGGER:A:LOGIC:STATE:WHEN FALSE`, indicating that the logic condition to trigger upon is false.

Example 2

```
TRIGger:A:LOGIc:STATE:WHEn TRUE
```

This command specifies that the logic condition to trigger upon is true.

TRIGger:A:LOGIc:THReshold?

Description

This query-only command returns the threshold voltage for all channels in A logic trigger. This command query is equivalent to selecting A Event (Main) Trigger Setup from the Trig menu and then viewing the current Input Threshold voltage settings.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:THReshold:CH<x> (see page 378), TRIGger:A:LOGIc:INPut? (see page 357), TRIGger:A:LOGIc:INPut:CH<x> (see page 358)

Syntax

```
TRIGger:A:LOGIc:THReshold?
```

Example

```
TRIGger:A:LOGIc:THReshold?
```

This query might return `:TRIGGER:A:LOGIC:THRESHOLD CH1 24.0000E-03;CH2 1.2000E+00;CH3 1.2000E+00;CH4 1.2000E+00`, indicating the threshold voltages for the channels in A logic trigger are as follows: channel 1 = 24 mV; channel 2 = 1.2 V; channel 3 = 1.2 V; channel 4 = 1.2 V.

TRIGger:A:LOGIc:THReshold:CH<x>

Description

This command sets or queries the A logic trigger threshold voltage for the channel, specified by x, which ranges from 1 through 4. This command is equivalent to selecting A Event (Main) Trigger Setup from the Trig menu and then setting the desired Input Threshold voltage for the desired channel.

Group

Trigger

Related Commands

TRIGger:A:LOGIc:INPut? (see page 357)

Syntax 1

```
TRIGger:A:LOGIc:THReshold:CH<x> <NR3>
```

Syntax 2

```
TRIGger:A:LOGic:THReshold:CH<x>?
```

Argument

- `<NR3>`

  This specifies the threshold voltage.

Example 1

```
TRIGger:A:LOGIc:THReshold:CH3?
```

This query might return `:TRIGGER:A:LOGIC:THRESHOLD:CH3 1.2000E+00`, indicating that the A logic trigger threshold voltage for channel 3 is 1.2 V.

Example 2

```
TRIGger:A:LOGIcTHReshold:CH2 3.0E-3
```

This command sets the A logic trigger threshold voltage for channel 2 to 3 mV.

TRIGger:A:MODe

Description

This command sets or queries the A trigger mode. This command is equivalent to selecting Mode from the Trig menu and then choosing the desired Trigger Mode.

Group

Trigger

Related Commands

TRIGger:A:LEVel (see page 353)

Syntax 1

```
TRIGger:A:MODe {AUTO|NORMal}
```

Syntax 2

```
TRIGger:A:MODe?
```

Arguments

- `AUTO`

  This generates a trigger if one is not detected within a specified time period.

- `NORMal`

  This waits for a valid trigger event.

Example 1

```
TRIGger:A:MODe?
```

This query might return `:TRIGGER:A:MODE NORMAL`, indicating that a valid trigger event must occur before a trigger is generated.

Example 2

```
TRIGger:A:MODe NORMAL
```

This command specifies that a valid trigger event must occur before a trigger is generated.

TRIGger:A:PULse?

Description

This query-only command returns the A pulse trigger parameters.

Group

Trigger

Related Commands

TRIGger:A:EDGE? (see page 345), TRIGger:A:LOGIc? (see page 354)

Syntax

```
TRIGger:A:PULse?
```

Example

```
TRIGger:A:PULse?
```

This query might return `:TRIGGER:A:PULSE:CLASS GLITCH;SOURCE CH1;GLITCH:WIDTH 2.0000E-9;TRIGIF ACCEPT;POLARITY POSITIVE;:TRIGGER:A:PULSE:RUNT:POLARITY POSITIVE ;THRESHOLD:HIGH 1.2000;LOW 800.0000E-3;:TRIGGER:A:PULSE :RUNT:WHEN OCCURS;WIDTH 2.0000E-9;:TRIGGER:A:PULSE: TRANSITION:DELTATIME 2.0000E-9;POLARITY POSITIVE ;THRESHOLD:HIGH 1.2000;LOW 800.0000E-3;:TRIGGER:A :PULSE:TRANSITION:WHEN SLOWERTHAN;:TRIGGER:A:PULSE:WIDTH :LOWLIMIT 2.0000E-9;HIGHLIMIT 2.0000E-9;WHEN WITHIN ;POLARITY POSITIVE;:TRIGGER:A:PULSE:TIMEOUT:POLARITY STAYSHIGH;TIME 2.0000E-9`

TRIGger:A:PULse:CLAss

Description

This command sets or queries the type of pulse on which to trigger. This command is equivalent to selecting A Event (Main) Trigger Setup from the Trig menu and then choosing the desired pulse Trigger Type.

Group

Trigger

Related Commands

TRIGger:A:PULse:GLItch? (see page 382), TRIGger:A:PULse:RUNT? (see page 386), TRIGger:A:PULse:WIDth? (see page 406), TRIGger:A:PULse:TIMEOut? (see page 403), TRIGger:A:PULse:TRANsition? (see page 394), TRIGger:A:TYPe (see page 412)

Syntax 1

```
TRIGger:A:PULse:CLAss {GLItch|RUNT|WIDth|TRANsition|TIMEOut}
```

Syntax 2

```
TRIGger:A:PULse:CLAss?
```

Arguments

- `GLItch`

  This triggers when a pulse is found that is of the specified polarity and width. These are set with the commands TRIGger:A:PULse:GLITch:POLarity and TRIGger:A:PULse;GLItch:WIDth.

- `RUNT`

  This triggers when a pulse crosses the first preset voltage threshold but does not cross the second preset threshold before re-crossing the first. The thresholds are set with the TRIGger:A:PULse:RUNT:THReshold:LOW and TRIGger:A:PULse:RUNT:THReshold:HIGH commands.

- `WIDth`

  This triggers when a pulse is found that has the specified polarity and is either inside or outside the limits as specified by TRIGger:A;PULse:WIDth:LOWLimit and TRIGger:A:PULse:WIDth:HIGHLimit. The polarity is selected using the TRIGger:A:PULse:WIDth:POLarity command.

- `TRANsition`

  This triggers when a pulse crosses both thresholds in the same direction as the specified polarity and the transition time between the two threshold crossings is greater or less than the specified time delta.

- `TIMEOut`

  This triggers when the pulse train stops in the selected state for longer than the specified time.

Example 1

```
TRIGger:A:PULse:CLAss?
```

This query might return `:TRIGGER:A:PULSE:CLASS GLITCH`, indicating that a pulse was found that is of the specified polarity and width.

Example 2

```
TRIGger:A:PULse:CLAss WIDth
```

This command specifies a width pulse for the A trigger.

TRIGger:A:PULse:GLItch?

Description

This query-only command returns the current A glitch pulse trigger parameters. This command query is equivalent to selecting Glitch Setup from the Trig menu and then viewing the current pulse glitch settings.

Group

Trigger

Related Commands

TRIGger:A:PULse:GLItch:POLarity (see page 383), TRIGger:A:PULse:GLItch:TRIGIF(see page 384), TRIGger:A:PULse:GLItch:WIDth (see page 385)

Syntax

```
TRIGger:A:PULse:GLItch?
```

Example

```
TRIGger:A:PULse:GLItch?
```

This query might return `:TRIGGER:A:PULSE:GLITCH:WIDTH 2.0000E-09;FILTER ACCEPT;POLARITY POSITIVE`

TRIGger:A:PULse:GLItch:POLarity

Description

This command sets or queries the polarity for A pulse glitch trigger. This command is equivalent to selecting Glitch Setup from the Trig menu and then choosing the desired Polarity.

Group

Trigger

Related Commands

TRIGger:A:LEVel (see page 353), TRIGger:A:PULse:GLItch:WIDth (see page 385)

Syntax 1

```
TRIGger:A:PULse:GLItch:POLarity {POSITIVe|NEGative|EITher}
```

Syntax 2

```
TRIGger:A:PULse:GLItch:POLarity?
```

Arguments

- `POSITIVe`

  This specifies that the oscilloscope will only trigger when the polarity of the glitch is positive.

- `NEGative`

  This specifies that the oscilloscope will only trigger when the polarity of the glitch is negative.

- `EITher`

  This specifies that the oscilloscope will trigger when the polarity of the glitch is either positive or negative.

Example 1

```
TRIGger:A:PULse:GLItch:POLarity?
```

This query might return `:TRIGGER:A:PULSE:GLITCH:POLARITY POSITIVE`, indicating that the polarity of the glitch must be positive for the trigger to occur.

Example 2

```
TRIGger:A:PULse:GLItch:POLarity EITHER
```

This command specifies that the polarity of the glitch can be either positive or negative for the trigger to occur.

TRIGger:A:PULse:GLItch:TRIGIF

Description

This command sets or queries the acceptance/rejection of the glitch pulse trigger, based on width. This command is equivalent to selecting Glitch Setup from the Trig menu and then choosing the desired Trig if Width setting.

Group

Trigger

Related Commands

TRIGger:A:PULse:GLItch:WIDth (see page 385)

Syntax 1

```
TRIGger:A:PULse:GLItch:TRIGIF {ACCept|REJect}
```

Syntax 2

```
TRIGger:A:PULse:GLItch:TRIGIF?
```

Arguments

- `ACCept`

  This specifies that the oscilloscope will only trigger on pulses that are narrower than the specified width, when the trigger type is set to pulse glitch. The width is specified using the TRIGger:A:PULse:GLItch:WIDth command.

- `REJect`

  This specifies that the oscilloscope will only trigger on pulses that are wider than the specified width, when the trigger type is set to pulse glitch. The width is specified using the TRIGger:A:PULse:GLItch:WIDth command.

Example 1

```
TRIGger:A:PULse:GLItch:TRIGIF?
```

This query might return `:TRIGGER:A:PULSE:GLITCH:TRIGIF ACCEPT`, indicating that the oscilloscope is set to trigger on pulses that are narrower than the specified width.

Example 2

```
TRIGger:A:PULse:GLItch:TRIGIF REJect
```

This command specifies that the oscilloscope triggers on pulses that are wider than the specified width.

TRIGger:A:PULse:GLItch:WIDth

Description

This command sets or queries the width for the A pulse glitch trigger. This command is equivalent to selecting Glitch Setup from the Trig menu and then setting the desired Width.

For information about using the width value, refer to the TRIGger:A:PULse:GLItch:TRIGIF command.

Group

Trigger

Related Commands

TRIGger:A:LEVel (see page 353), TRIGger:A:PULse:GLItch:TRIGIF (see page 384)

Syntax 1

```
TRIGger:A:PULse:GLItch:WIDth <NR3>
```

Syntax 2

```
TRIGger:A:PULse:GLItch:WIDth?
```

Argument

- `<NR3>`

  This specifies the width of the glitch, in seconds.

Example 1

```
TRIGger:A:PULse:GLItch:WIDth?
```

This query might return `:TRIGGER:A:PULSE:GLITCH:WIDTH 2.0000E-09`, indicating that the width of the glitch is currently set at 2 ns.

Example 2

```
TRIGger:A:PULse:GLItch:WIDth 15E-6
```

This command sets the width of the glitch to 15 µs.

TRIGger:A:PULse:RUNT?

Description

This query-only command returns the current A runt pulse trigger parameters. This command query is equivalent to selecting Runt Setup from the Trig menu and then viewing the current settings.

Group

Trigger

Related Commands

TRIGger:A:PULse:GLItch? (see page 382), TRIGger:A:PULse:TIMEOut? (see page 403), TRIGger:A:PULse:TRANsition? (see page 394), TRIGger:A:PULse:WIDth? (see page 406)

Syntax

```
TRIGger:A:PULse:RUNT?
```

Example

```
TRIGger:A:PULse:RUNT?
```

This query might return `:TRIGGER:A:PULSE:RUNT:POLARITY POSITIVE;THRESHOLD:HIGH 2.0000E+00;LOW 8,0000E-01;:TRIGGER:A:PULSE:RUNT:WHEN OCCURS;WIDTH 2.0000E-09`

TRIGger:A:PULse:RUNT:POLarity

Description

This command sets or queries the polarity for the A pulse runt trigger. This command is equivalent to selecting Runt Setup from the Trig menu and then choosing the Polarity setting.

Group

Trigger

Related Commands

TRIGger:A:PULse:RUNT:THReshold? (see page 388)

Syntax 1

```
TRIGger:A:PULse:RUNT:POLarity {POSITIVe|NEGAtive|EITher}
```

Syntax 2

```
TRIGger:A:PULse:RUNT:POLarity?
```

Arguments

- `POSitive`

  This indicates that the rising edge crosses the low threshold and the falling edge re-crosses the low threshold without either edge ever crossing the high threshold.

- `NEGative`

  This indicates that the falling edge crosses the high threshold and the rising edge re-crosses the high threshold without either edge ever crossing the low threshold.

- `EITher`

  This indicates either negative or positive polarity.

Example 1

```
TRIGger:A:PULse:RUNT:POLarity?
```

This query might return `:TRIGGER:A:PULSE:RUNT:POLARITY POSITIVE`, indicating that the polarity of the A pulse runt trigger is positive.

Example 2

```
TRIGger:A:PULse:RUNT:POLarity NEGATIVE
```

This command specifies that the polarity of the A pulse runt trigger is negative.

TRIGger:A:PULse:RUNT:THReshold?

Description

This query-only command returns the upper and lower thresholds for the A pulse runt trigger. This command query is equivalent to selecting Runt Setup from the Trig menu and then viewing the runt trigger Upper Level and Lower Level settings.

Group

Trigger

Related Commands

TRIGger:A:PULse:RUNT:POLarity (see page 387), TRIGger:A:PULse:RUNT:THReshold:BOTh (see page 389), TRIGger:A:PULse:RUNT:THReshold:HIGH (see page 390), TRIGger:A:PULse:RUNT:THReshold:LOW (see page 391)

Syntax

```
TRIGger:A:PULse:RUNT:THReshold?
```

Example

```
TRIGger:A:PULse:RUNT:THReshold?
```

This query might return `:TRIGGER:A:PULSE:THRESHOLD:HIGH 2.0000E+00;LOW 8.0000E-01`, indicating that the upper threshold is 2 V and that the lower threshold is 800 mV.

TRIGger:A:PULse:RUNT:THReshold:BOTh

Description

This command (no query form) sets the upper and lower switching thresholds for the A pulse runt trigger. This command is equivalent to selecting Runt Setup from the Trig menu and then setting the desired runt trigger Upper Level and Lower Level voltages.

Group

Trigger

Related Commands

TRIGger:A:PULse:RUNT:THReshold? (see page 388)

Syntax

```
TRIGger:A:PULse:RUNT:THReshold:BOTh {TTL|ECL}
```

Arguments

- `TTL`

  This sets the upper threshold to 1.8 V and the lower threshold to 800 mV, which are the nominal TTL voltage levels.

- `ECL`

  This sets the upper threshold to -1.1 V and the lower threshold to -1.5 V, which are the nominal ECL voltage levels.

Example

```
TRIGger:A:PULse:RUNT:THReshold:BOTh TTL
```

This command sets the threshold of the pulse runt trigger to the nominal TTL voltage levels.

TRIGger:A:PULse:RUNT:THReshold:HIGH

Description

This command sets or queries the upper limit for the A pulse runt trigger. This command is equivalent to selecting Runt Setup from the Trig menu and then setting the desired runt trigger Upper Level voltage.

Group

Trigger

Related Commands

TRIGger:A:PULse:RUNT:THReshold? (see page 388)

Syntax 1

```
TRIGger:A:PULse:RUNT:THReshold:HIGH <NR3>
```

Syntax 2

```
TRIGger:A:PULse:RUNT:THReshold:HIGH?
```

Argument

- `<NR3>`

  This specifies the threshold value, in volts.

Example 1

```
TRIGger:A:PULse:RUNT:THReshold:HIGH?
```

This query might return `:TRIGGER:A:PULSE:RUNT:THRESHOLD:HIGH 1.1000E+00`, indicating that the upper limit of the pulse runt trigger is currently set to -1.1 V.

Example 2

```
TRIGger:A:PULse:RUNT:THReshold:HIGH 120E-3
```

This command sets the upper limit of the pulse runt trigger to 120 mV.

TRIGger:A:PULse:RUNT:THReshold:LOW

Description

This command sets or queries the lower limit for the A pulse runt trigger. This command is equivalent to selecting Runt Setup from the Trig menu and then setting the desired runt trigger Lower Level voltage.

Group

Trigger

Related Commands

TRIGger:A:PULse:RUNT:THReshold? (see page 388)

Syntax 1

```
TRIGger:A:PULse:RUNT:THReshold:LOW <NR3>
```

Syntax 2

```
TRIGger:A:PULse:RUNT:THReshold:LOW?
```

Argument

- `<NR3>`

  This specifies the threshold value, in volts.

Example 1

```
TRIGger:A:PULse:RUNT:THReshold:LOW?
```

This query might return `:TRIGGER:A:PULSE:RUNT:THRESHOLD:LOW 1.2000E-01`, indicating that the lower limit of the pulse runt trigger is currently set to 120 mV.

Example 2

```
TRIGger:A:PULse:RUNT:THReshold:LOW 50E-3
```

This command sets the lower limit of the pulse runt trigger to 50 mV.

TRIGger:A:PULse:RUNT:WHEn

Description

This command sets or queries the type of pulse width the trigger checks for when it uncovers a runt. This is equivalent to selecting Runt Setup from the Trig menu and then choosing the desired Trigger When setting from the Runt drop-down list.

Group

Trigger

Related Commands

TRIGger:A:PULse:RUNT:WIDth (see page 393)

Syntax 1

```
TRIGger:A:PULse:RUNT:WHEn {OCCurs|WIDERthan}
```

Syntax 2

```
TRIGger:A:PULse:RUNT:WHEn?
```

Arguments

- `OCCurs`

  This specifies a trigger if a runt of any detectable width occurs.

- `WIDERthan`

  This specifies a trigger if a runt greater than the specified width occurs.

Example 1

```
TRIGger:A:PULse:RUNT:WHEn?
```

This query might return `:TRIGGER:A:PULSE:RUNT:WHEN OCCURS`, indicating that a runt trigger will occur if the oscilloscope detects a runt of any detectable width.

Example 2

```
TRIGger:A:PULse:RUNT:WHEn WIDERthan
```

This command sets the runt trigger to occur when the oscilloscope detects a runt in a pulse wider than the specified width.

TRIGger:A:PULse:RUNT:WIDth

Description

This command sets or queries the minimum width for a valid A pulse runt trigger. This command is equivalent to selecting Runt Setup from the Trig menu and then setting the desired Width.

Group

Trigger

Related Commands

TRIGger:A:PULse:RUNT:WHEn (see page 392)

Syntax 1

```
TRIGger:A:PULse:RUNT:WIDth <NR3>
```

Syntax 2

```
TRIGger:A:PULse:RUNT:WIDth?
```

Argument

- `<NR3>`

  This specifies the minimum width, in seconds.

Example 1

```
TRIGger:A:PULse:RUNT:WIDth?
```

This query might return `:TRIGGER:A:PULSE:RUNT:WIDTH 2.0000E-09`, indicating that the minimum width of a pulse runt trigger is 2 ns.

Example 2

```
TRIGger:A:PULse:RUNT:WIDth 15E-6
```

This command sets the minimum width of the pulse runt trigger to 15 μs.

TRIGger:A:PULse:TRANsition?

Description

This query-only command returns delta time, polarity, and both upper and lower threshold limits for the transition time trigger. This command is equivalent to selecting Transition Setup from the Trig menu and then viewing the current transition settings.

Group

Trigger

Related Commands

TRIGger:A:TYPe (see page 412), TRIGger:A:PULse:CLAss (see page 381), TRIGger:A:PULse:GLItch (see page 382), TRIGger:A:PULse:RUNT? (see page 386), TRIGger:A:PULse:TIMEOut? (see page 403), TRIGger:A:PULse:WIDth? (see page 406)

Syntax

```
TRIGger:A:PULse:TRANsition?
```

Example

```
TRIGger:A:PULse:TRANsition?
```

This query might return `:TRIGGER:A:PULSE:TRANSITION:DELTATIME 2.0000E-9;POLARITY POSITIVE;THRESHOLD:HIGH 1.2000;LOW 800.0000E-3;:TRIGGER:A:PULSE:TRANSITION:WHEN SLOWERTHAN`, indicating the current transition time trigger settings.

TRIGger:A:PULse:TRANsition:DELTATime

Description

This command sets or queries the delta time used in calculating the transition value. This is equivalent to selecting Transition Setup from the Trig menu and then setting the desired Time.

Group

Trigger

Related Commands

TRIGger:A:PULse:TRANsition:POLarity (see page 396), TRIGger:A:PULse:TRANsition:THReshold? (see page 397)

Syntax 1

```
TRIGger:A:PULse:TRANsition:DeltaTime <NR3>
```

Syntax 2

```
TRIGger:A:PULse:TRANsition:DeltaTime?
```

Argument

- `<NR3>`

  This specifies the delta time, in seconds.

Example 1

```
TRIGger:A:PULse:TRANsition:DeltaTime?
```

This query might return `:TRIGGER:A:PULSE:TRANSITION:DELTATIME 2.0000E-09`, indicating that the transition trigger's delta time is set to 2 ns.

Example 2

```
TRIGger:A:PULse:TRANsition:DeltaTime 15E-6
```

This command sets the delta time of the transition trigger to 15 μs .

TRIGger:A:PULse:TRANsition:POLarity

Description

This command sets or queries the polarity for the A pulse transition trigger. This command is equivalent to selecting Transition Setup from the Trig menu and then choosing from the Polarity pull-down list.

Group

Trigger

Related Commands

TRIGger:A:PULse:TRANsition:DELTATime (see page 395)

Syntax 1

```
TRIGger:A:PULse:TRANsition:POLarity {POSITIVe|NEGative|EITher}
```

Syntax 2

```
TRIGger:A:PULse:TRANsition:POLarity?
```

Arguments

- `POSITIVe`

  This indicates that a pulse edge must traverse from the lower (most negative) to higher (post positive) level for transition triggering to occur.

- `NEGative`

  This indicates that a pulse edge must traverse from the upper (most positive) to lower (most negative) level for transition triggering to occur.

- `EITher`

  This indicates either positive or negative polarity.

Example 1

```
TRIGger:A:PULse:TRANsition:POLarity?
```

This query might return `:TRIGGER:A:PULSE:TRANSITION:POLARITY EITHER` indicating that the transition can be either positive or negative.

Example 2

```
TRIGger:A:PULse:TRANsition:DeltaTime NEGative
```

This command sets the transition polarity to negative.

TRIGger:A:PULse:TRANsition:THReshold?

Description

This query-only command returns the upper and lower threshold limits for the transition time trigger. This command is equivalent to selecting Transition Setup from the Trig menu and then viewing the Upper Level and Lower Level voltage settings.

Group

Trigger

Related Commands

TRIGger:A:PULse:TRANsition:DELTATime (see page 395), TRIGger:A:PULse:TRANsition:POLarity (see page 396)

Syntax

```
TRIGger:A:PULse:TRANsition:THReshold?
```

Example

```
TRIGger:A:PULse:TRANsition:THReshold?
```

This query might return `:TRIGGER:A:PULSE:TRANSITION:THRESHOLD:HIGH 1.2000;LOW 800.0000E-3`, indicating the upper and lower threshold limits for the transition time trigger.

TRIGger:A:PULse:TRANsition:THReshold:BOTh

Description

This command (no query form) sets the upper and lower thresholds for pulse transition trigger. This command is equivalent to selecting Transition Setup from the Trig menu and then setting the desired Upper Level and Lower Level voltages.

Group

Trigger

Related Commands

TRIGger:A:PULse:TRANsition:THReshold:HIGH (see page 399),
TRIGger:A:PULse:TRANsition:THReshold:LOW (see page 400)

Syntax 1

```
TRIGger:A:PULse:TRANsition:THReshold:BOTh {TTL|ECL}
```

Arguments

- `TTL`

  This sets the upper threshold to 1.2 V and the lower threshold to 800 mV, which represent the nominal TTL voltage levels.

- `ECL`

  This sets the upper threshold to -1.1 V and the lower threshold to -1.5 V, which represent the nominal ECL voltage levels.

Example 1

```
TRIGger:A:PULse:TRANsition:THReshold:BOTh TTL
```

This command sets the thresholds of the pulse transition trigger to the nominal TTL voltage levels.

TRIGger:A:PULse:TRANsition:THReshold:HIGH

Description

This command sets or queries the upper (most positive) transition trigger threshold. This command is equivalent to selecting Transition Setup from the Trig menu and then setting the desired Upper Level voltage.

Group

Trigger

Related Commands

TRIGger:A:PULse:TRANsition:THReshold:LOW (see page 400)

Syntax 1

```
TRIGger:A:PULse:TRANsition:THReshold:HIGH <NR3>
```

Syntax 2

```
TRIGger:A:PULse:TRANsition:THReshold:HIGH?
```

Argument

- `<NR3>`

  This specifies the upper threshold, in volts.

Example 1

```
TRIGger:A:PULse:TRANsition:THReshold:HIGH?
```

This query might return `:TRIGGER:A:PULSE:TRANSITION:THRESHOLD:HIGH 2.0000E+00`, indicating that the upper limit of the pulse transition trigger is 2 V.

Example 2

```
TRIGger:A:PULse:TRANsition:THReshold:HIGH 120E-3
```

This command sets the upper limit of the pulse transition trigger to 120 mV.

TRIGger:A:PULse:TRANsition:THReshold:LOW

Description

This command sets or queries the lower (most negative) transition trigger threshold. This command is equivalent to selecting Transition Setup from the Trig menu and then setting the desired Lower Level voltage.

Group

Trigger

Related Commands

TRIGger:A:PULse:TRANsition:THReshold:HIGH (see page 399)

Syntax 1

```
TRIGger:A:PULse:TRANsition:THReshold:LOW <NR3>
```

Syntax 2

```
TRIGger:A:PULse:TRANsition:THReshold:LOW?
```

Argument

- `<NR3>`

  This specifies the lower threshold, in volts.

Example 1

```
TRIGger:A:PULse:TRANsition:THReshold:LOW?
```

This query might return `:TRIGGER:A:PULSE:TRANSITION:THRESHOLD:LOW 50.0000E-03`, indicating that the lower limit of the pulse transition trigger is 50 mV.

Example 2

```
TRIGger:A:PULse:TRANsition:THReshold:LOW 20E-3
```

This command sets the lower limit of the pulse transition trigger to 20 mV.

TRIGger:A:PULse:TRANsition:WHEn

Description

This command sets or queries whether to check for a transitioning signal that is faster or slower than the specified delta time. This is equivalent to selecting Transition Setup from the Trig menu and then choosing the desired Trigger When Transition Time setting.

Group

Trigger

Related Commands

TRIGger:A:PULse:TRANsition:DELTATime (see page 395), TRIGger:A:PULse:TRANsition:POLarity (see page 396), TRIGger:A:PULse:TRANsition:THReshold? (see page 397)

Syntax 1

```
TRIGger:A:PULse:TRANsition:WHEn {FASTERthan|SLOWERthan}
```

Syntax 2

```
TRIGger:A:PULse:TRANsition:WHEn?
```

Arguments

- `FASTERthan`

  This sets the trigger to occur when the transitioning signal is faster than the set volts/second rate.

- `SLOWERthan`

  This sets the trigger to occur when the transitioning signal is slower than the set volts/second rate.

Example 1

```
TRIGger:A:PULse:TRANsition:WHEn?
```

This query might return `:TRIGGER:A:PULSE:TRANSITION:WHEN FASTERTHAN`, indicating that the transition triggers when the transitioning signal is faster than the set volts/second rate.

Example 2

```
TRIGger:A:PULse:TRANsition:WHEn SLOWERthan
```

This command sets the transition trigger to work when the transitioning signal is slower than the set volts/second rate.

TRIGger:A:PULse:SOUrce

Description

This command sets or queries the source for the A pulse trigger. This source parameter applies to all classes of pulse trigger. This command is equivalent to selecting Transition Setup from the Trig menu and then choosing the desired channel from the Source pull-down list.

Group

Trigger

Related Commands

TRIGger:A:EDGE:SOUrce (see page 348)

Syntax 1

```
TRIGger:A:PULse:SOUrce CH<x>
```

Syntax 2

```
TRIGger:A:PULse:SOUrce?
```

Argument

- `CH<x>`

  This specifies one of the input channels, which range from 1 through 4.

Example 1

```
TRIGger:A:PULse:SOUrce?
```

This query might return `:TRIGGER:A:PULSE:SOURCE CH2`, indicating that channel 2 is the source for the A pulse trigger.

Example 2

```
TRIGger:A:PULse:SOUrce CH4
```

This command sets channel 4 as the source for the A pulse trigger.

TRIGger:A:PULse:TIMEOut?

Description

This query-only command returns the polarity and time-out duration for the A pulse time-out trigger. This command is equivalent to selecting Transition Setup from the Trig menu and then viewing the current Polarity and Time settings.

Group

Trigger

Related Commands

TRIGger:A:PULse:TIMEOut:POLarity (see page 404), TRIGger:A:PULse:TIMEOut:TIMe (see page 405)

Syntax

```
TRIGger:A:PULse:TIMEOut?
```

Example

```
TRIGger:A:PULse:TIMEOut?
```

This query might return `:TRIGGER:A:PULSE:TIMEOUT:POLARITY STAYSHIGH;TIME 2.0000E-9,` indicating that the A current polarity setting for the pulse trigger is STAYSHIGH (positive) and the current timeout duration is 2 ns.

TRIGger:A:PULse:TIMEOut:POLarity

Description

This command sets or queries the polarity for the A pulse time-out trigger. This command is equivalent to selecting Transition Setup from the Trig menu and then setting the desired Polarity.

Group

Trigger

Related Commands

TRIGger:A:PULse:TIMEOut? (see page 403)

Syntax 1

```
TRIGger:A:PULse:TIMEOut:POLarity {STAYSHigh|STAYSLow|EITher}
```

Syntax 2

```
TRIGger:A:PULse:TIMEOut:POLarity?
```

Arguments

- `STAYSHigh`

  This indicates that a pulse edge must stay high (positive) for the required time period to permit time-out triggering to occur. This is the default polarity.

- `STAYSLow`

  This indicates that a pulse edge must stay low (negative) for the required time period to permit time-out triggering to occur.

- `EITher`

  This indicates that the polarity of the time-out trigger can stay either high or low (positive or negative) for the required time period to permit time-out triggering to occur.

Example 1

```
TRIGger:A:PULse:TIMEOut:POLarity?
```

This query might return `:TRIGGER:A:PULSE:TIMEOUT:POLARITY EITHER`, indicating that the polarity of the A pulse time-out trigger can be either positive or negative.

Example 2

```
TRIGger:A:PULse:TIMEOut:POLarity STAYSHigh
```

This command sets the polarity of the A pulse time-out trigger to positive.

TRIGger:A:PULse:TIMEOut:TIMe

Description

This command sets or queries the pulse time-out trigger time, in seconds. This command is equivalent to selecting Transition Setup from the Trig menu and then setting the desired time-out Time.

Group

Trigger

Related Commands

TRIGger:A:PULse:TIMEOut? (see page 403)

Syntax 1

```
TRIGger:A:PULse:TIMEOut:TIMe <NR3>
```

Syntax 2

```
TRIGger:A:PULse:TIMEOut:TIMe?
```

Argument

- `<NR3>`

  This specifies the time-out time period, in seconds.

Example 1

```
TRIGger:A:PULse:TIMEOut:TIMe?
```

This query might return `:TRIGGER:A:PULSE:TIMEOUT:TIME 2.0000E-9`, indicating that the time-out time is currently set to 2 ns.

Example 2

```
TRIGger:A:PULse:TIMEOut:TIMe 3.134E-6
```

This command sets the time-out time to 3.134 μs.

TRIGger:A:PULse:WIDth?

Description

This query-only command returns the width parameters for the A pulse width trigger. This command is equivalent to selecting Width Setup from the Trig menu and then viewing the current pulse width trigger Lower Limit, Upper Limit, Trig When and Polarity settings.

Group

Trigger

Related Commands

TRIGger:A:PULse:WIDth:HIGHLimit (see page 407), TRIGger:A:PULse:WIDth:LOWLimit (see page 408), TRIGger:A:PULse:WIDth:POLarity (see page 409), TRIGger:A:PULse:WIDth:WHEn (see page 410)

Syntax 1

```
TRIGger:A:PULse:WIDth
```

Example

```
TRIGger:A:PULse:WIDth?
```

This query might return `:TRIGGER:A:PULSE:WIDTH:LOWLIMIT 2.0000E-9;HIGHLIMIT 2.0000E-9;WHEN WITHIN;POLARITY POSITIVE` as the current A pulse trigger parameters.

TRIGger:A:PULse:WIDth:HIGHLimit

Description

This command sets or queries the upper limit for the A pulse width trigger. This command is equivalent to selecting Width Setup from the Trig menu and then setting the pulse width trigger Upper Limit.

Group

Trigger

Related Commands

TRIGger:A:PULse:WIDth? (see page 406)

Syntax 1

```
TRIGger:A:PULse:WIDth:HIGHLimit <NR3>
```

Syntax 2

```
TRIGger:A:PULse:WIDth:HIGHLimit?
```

Argument

- `<NR3>`

  This specifies the A pulse width trigger upper limit, in seconds.

Example 1

```
TRIGger:A:PULse:WIDth:HIGHLimit?
```

This query might return `:TRIGGER:A:PULSE:WIDTH:HIGHLIMIT 2.0000E-9,` indicating that the A pulse upper limit is set to 2 ns.

Example 2

```
TRIGger:A:PULse:WIDth:HIGHLimit 5.0E-6
```

This command sets the A pulse upper limit to 5 μs.

TRIGger:A:PULse:WIDth:LOWLimit

Description

This command sets or queries the lower limit for the A pulse width trigger. This command is equivalent to selecting Width Setup from the Trig menu and then setting the pulse width trigger Lower Limit.

Group

Trigger

Related Commands

TRIGger:A:PULse:WIDth? (see page 393)

Syntax 1

```
TRIGger:A:PULse:WIDth:LOWLimit <NR3>
```

Syntax 2

```
TRIGger:A:PULse:WIDth:LOWLimit?
```

Argument

- `<NR3>`

  This specifies the A pulse width trigger lower limit, in seconds.

Example 1

```
TRIGger:A:PULse:WIDth:LOWLimit?
```

This query might return `:TRIGGER:A:PULSE:WIDTH:LOWLIMIT 1.0000E-9`, indicating that the A pulse lower limit is set to 1 ns.

Example 2

```
TRIGger:A:PULse:WIDth:LOWLimit 2.0E-6
```

This command sets the A pulse lower limit to 2 μs.

TRIGger:A:PULse:WIDth:POLarity

Description

This command sets or queries the polarity for the A pulse width trigger. This command is equivalent to selecting Width Setup from the Trig menu and then selecting the pulse width trigger Polarity.

Group

Trigger

Related Commands

TRIGger:A:PULse:WIDth? (see page 406)

Syntax 1

```
TRIGger:A:PULse:WIDth:POLarity {NEGAtive|POSITIVe}
```

Syntax 2

```
TRIGger:A:PULse:WIDth:POLarity?
```

Arguments

- `NEGAtive`

  This specifies a negative pulse.

- `POSITIVe`

  This specifies a positive pulse.

Example 1

```
TRIGger:A:PULse:WIDth:POLarity?
```

This query might return `:TRIGGER:A:PULSE:WIDTH:POLARITY POSITIVE`, indicating a positive pulse.

Example 2

```
TRIGger:A:PULse:WIDth:POLarity NEGAtive
```

This command sets the pulse polarity to negative.

TRIGger:A:PULse:WIDth:WHEn

Description

This command sets or queries whether to trigger on a pulse width that falls outside (or within) the specified range of limits. You can define or query trigger pulse width upper and lower limits using the TRIGger:A:PULse:WIDth:HIGHLimit and TRIGger:A:PULse:WIDth:LOWLimit commands.

This command is equivalent to selecting Width Setup from the Trig menu and then choosing from the Trig When drop-down list.

Group

Trigger

Related Commands

TRIGger:A:PULse:WIDth:HIGHLimit (see page 407), TRIGger:A:PULse:WIDth:LOWLimit (see page 408)

Syntax 1

```
TRIGger:A:PULse:WIDth:WHEn {OUTside|WIThin}
```

Syntax 2

```
TRIGger:A:PULse:WIDth:WHEn?
```

Arguments

- `OUTside`

  This specifies a trigger when the duration of the pulse is greater than the high limit or less than the low limit specified. The high and low limits are specified with the TRIGger:A:PULse:WIDth:HIGHLimit and TRIGger:A:PULse:WIDth:LOWLimit commands respectively.

- `WIThin`

  This specifies a trigger when the duration of the pulse is within the high and low limits. The high and low limits are specified with the TRIGger:A:PULse:WIDth:HIGHLimit and TRIGger:A:PULse:WIDth:LOWLimit command respectively.

Example 1

```
TRIGger:A:PULse:WIDth:WHEn?
```

This query might return `:TRIGGER:A:PULSE:WIDTH:WHEN OUTSIDE,` indicating the conditions for generating a pulse trigger.

Example 2

```
TRIGger:A:PULse:WIDth:WHEn WIThin
```

This command specifies that the duration of the A pulse will fall within defined high and low limits.

TRIGger:STATE?

Description

This query-only command returns the current state of the triggering system. This command is equivalent to viewing the trigger status LEDs on the instrument front-panel.

Group

Trigger

Related Commands

TRIGger:A:MODe (see page 379)

Syntax

`TRIGger:STATE?`

Outputs

- `ARMed`

  This indicates that the oscilloscope is acquiring pretrigger information. All triggers are ignored when TRIGger:STATE is arming.

- `AUTO`

  This indicates that the oscilloscope is in the auto mode and acquires data even in the absence of a trigger.

- `DPO`

  This indicates that the oscilloscope is in DPO mode.

- `PARTial`

  This indicates that the A trigger has occurred and the oscilloscope is waiting for the B trigger to occur.

- `REAdy`

  This indicates that all pretrigger information has been acquired and that the oscilloscope is ready to accept a trigger.

- `SAVe`

  This indicates that the oscilloscope is in save mode and is not acquiring data.

- `TRIGger`

  This indicates that the oscilloscope has seen a trigger and is acquiring the post-trigger information.

Example

`TRIGger:STATE?`

This query might return `:TRIGGER:STATE ARMED`, indicating that the pre-trigger data is being acquired.

TRIGger:A:TYPe

Description

This command sets or queries the type of A trigger. The three types of triggers consist of Edge, Logic, and Pulse. Both Logic and Pulse triggers contain classes. Logic triggers consist of State and Pattern classes; Pulse triggers consist of Glitch, Runt, Width, Transition, and Timeout classes. Once you have set the trigger type, you may also need to identify the associated trigger class. For details on selecting Logic and Pulse trigger classes, see TRIGger:A:LOGIc:CLAss and TRIGger:A:PULse:CLAss respectively. This command is similar to selecting A Event (Main) Trigger Setup from the Trig menu and then selecting the desired Trigger Type.

Group

Trigger

Related Commands

TRIGger:A:EDGE? (see page 345), TRIGger:A:LOGIc:CLAss (see page 355), TRIGger:A:PULse:CLAss (see page 381)

Syntax 1

```
TRIGger:A:TYPe {EDGE|LOGIc|PULse}
```

Syntax 2

```
TRIGger:A:TYPe?
```

Arguments

- `EDGE`

  This is a normal trigger. A trigger event occurs when a signal passes through a specified voltage level in a specified direction and is controlled by the TRIGger:A:EDGE commands.

- `LOGIc`

  This specifies that a trigger occurs when specified conditions are met and is controlled by the TRIGger:A:LOGIc commands.

- `PULse`

  This specifies that a trigger occurs when a specified pulse is found and is controlled by the TRIGger:A:PULse commands.

Example 1

```
TRIGger:A:TYPe?
```

This query might return `:TRIGGER:A:TYPE PULSE`, indicating that the A trigger type is a pulse trigger.

Example 2

```
TRIGger:A:TYPe EDGE
```

This command sets the A trigger type to EDGE.

TRIGger:B

Description

This command sets the B trigger level to 50% of minimum and maximum. The query form of this command returns the B trigger parameters. This command is similar to selecting B Event (Delayed) Trigger Setup from the Trig menu and then viewing the current setups.

Group

Trigger

Related Commands

TRIGger:A (see page 344)

Syntax 1

```
TRIGger:B SETLevel
```

Syntax 2

```
TRIGger:B?
```

Argument

- `SETLevel`

  This sets the B trigger level to 50% of MIN and MAX.

Example 1

```
TRIGger:B?
```

This query might return `:TRIGGER:B:STATE 0;TYPE EDGE;LEVEL -220.0000E-3;BY TIME;EDGE:SOURCE CH1;SLOPE RISE;COUPLING DC;:TRIGGER:B:TIME 16.0000E-9;EVENTS:COUNT 2`

Example 2

```
TRIGger:B SETLevel
```

This command sets the B trigger level to 50% of MIN and MAX.

TRIGger:B:BY

Description

This command selects or returns whether the B trigger occurs after a specified number of events or a specified period of time after the A trigger. This is equivalent to selecting B Event (Delayed) Trigger Setup from the Trig menu, selecting the A→B Seq tab, and then choosing Trig After Time or Trig on nth event.

Note: The traditional Runs After functionality is now served by the Horizontal Delay function. For details, see the HORIZontal[:MAIN]:DELay:MODe and HORIZontal[:MAIN]:DELay:TIMe commands.

Group

Trigger

Related Commands

TRIGger:B:EVENTS:COUNt (see page 420), TRIGger:B:TIMe (see page 423), HORIZontal[:MAIN]:DELay:MODe (see page 184), HORIZontal[:MAIN]:DELay:TIMe (see page 185)

Syntax 1

```
TRIGger:B:BY {EVENTS|TIMe}
```

Syntax 2

```
TRIGger:B:BY?
```

Arguments

- `EVENTS`

  This sets the B trigger to take place following a set number of trigger events after the A trigger occurs. The number of events is specified by TRIGger:B:EVENTS:COUNt.

- `TIMe`

  This sets the B trigger to be ready to occur a set time after the A trigger event. The time period is specified by TRIGger:B:TIMe.

Example 1

```
TRIGger:B:BY?
```

This query might return `:TRIGGER:B:BY EVENTS`, indicating that the B trigger takes place following a set number of trigger events after the A trigger occurs.

Example 2

```
TRIGger:B:BY TIMe
```

This command sets the B trigger to be ready to occur a set time after the A trigger event.

TRIGger:B:EDGE?

Description

This query-only command returns the source, slope, and coupling for the edge type of B trigger. This command is equivalent to selecting B Event (Delayed) Trigger Setup from the Trig menu and then viewing the current Source, Slope, and Coupling settings.

Group

Trigger

Related Commands

TRIGger:B:EDGE:COUPling (see page 416), TRIGger:B:EDGE:SLOpe (see page 417), TRIGger:B:EDGE:SOUrce (see page 418)

Syntax

```
TRIGger:B:EDGE?
```

Example

```
TRIGger:B:EDGE?
```

This query might return `:TRIGGER:B:EDGE:SOURCE CH1;SLOPE RISE;COUPLING DC`

TRIGger:B:EDGE:COUPling

Description

This command sets or queries the type of coupling for the B trigger. This command is equivalent to selecting B Event (Delayed) Trigger Setup from the Trig menu and then choosing the desired setting from the Coupling drop-down list.

Group

Trigger

Related Commands

TRIGger:B:EDGE? (see page 415)

Syntax 1

```
TRIGger:B:EDGE:COUPling {DC|ATRIGger|NOISErej}
```

Syntax 2

```
TRIGger:B:EDGE:COUPling?
```

Arguments

- `ATRIGger`

  This sets the B trigger coupling to match the setting on the A trigger.

- `DC`

  This selects DC trigger coupling.

- `NOISErej`

  This selects DC low sensitivity.

Example 1

```
TRIGger:B:EDGE:COUPling?
```

This query might return `:TRIGGER:B:EDGE:COUPLING ATRIGGER` for the B trigger coupling.

Example 2

```
TRIGger:B:EDGE:COUPling DC
```

This command selects DC for the B trigger coupling.

TRIGger:B:EDGE:SLOpe

Description

This command sets or queries the slope for the B edge trigger. This command is equivalent to selecting B Event (Delayed) Trigger Setup from the Trig menu and then choosing the desired Slope.

Group

Trigger

Related Commands

TRIGger:B:EDGE? (see page 415)

Syntax 1

```
TRIGger:B:EDGE:SLOpe {RISe|FALL}
```

Syntax 2

```
TRIGger:B:EDGE:SLOpe?
```

Arguments

- `RISe`

  This specifies the trigger on the rising or positive edge of a signal.

- `FALL`

  This specifies the trigger in the falling or negative edge of a signal.

Example 1

```
TRIGger:B:EDGE:SLOpe?
```

This query might return `:TRIGGER:B:EDGE:SLOPE RISE`, indicating that the B edge trigger occurs on the rising slope.

Example 2

```
TRIGger:B:EDGE:SLOpe FALL
```

This command sets the B edge trigger to occur on the falling slope.

TRIGger:B:EDGE:SOUrce

Description

This command sets or queries the source for the B edge trigger. This command is equivalent to selecting B Event (Delayed) Trigger Setup from the Trig menu and then choosing the desired setting from the Source drop-down list.

Group

Trigger

Related Commands

TRIGger:B:EDGE? (see page 415)

Syntax 1

```
TRIGger:B:EDGE:SOUrce {AUXiliary|CH<x>}
```

Syntax 2

```
TRIGger:B:EDGE:SOUrce?
```

Arguments

- `AUXiliary`

  This specifies an external trigger (using the Auxiliary Trigger Input connector, located on the rear panel of the oscilloscope) as the B trigger source.

- `CH<x>`

  This specifies one of the input channels as the delay trigger source. Input channels are specified by x, which can range from 1 through 4.

Example 1

```
TRIGger:B:EDGE:SOUrce?
```

This query might return `:TRIGGER:B:EDGE:SOURCE CH1`, indicating that the current input source for the B trigger is channel 1.

Example 2

```
TRIGger:B:EDGE:SOUrce CH4
```

This command sets channel 4 as the input source for the B trigger.

TRIGger:B:EVENTS?

Description

This query-only command returns the current B trigger events parameter. This command is equivalent to selecting B Event (Delayed) Trigger Setup from the Trig menu, selecting the A→B Seq tab, choosing Trig on nth event, and then viewing the Trig Event setting.

Group

Trigger

Related Commands

TRIGger:B:EVENTS:COUNt (see page 420)

Syntax

```
TRIGger:B:EVENTS?
```

Example

```
TRIGger:B:EVENTS?
```

This query might return `:TRIGGER:B:EVENTS:COUNT 2`, indicating that 2 events must occur before the B trigger occurs.

TRIGger:B:EVENTS:COUNt

Description

This command sets or queries the number of events that must occur before the B trigger (when TRIG:DELay:BY is set to EVENTS). This command is equivalent to selecting B Event (Delayed) Trigger Setup from the Trig menu, selecting the A→B Seq tab, choosing Trig on nth event, and then setting the desired Trig Event value.

Group

Trigger

Related Commands

TRIGger:B:EVENTS? (see page 419)

Syntax 1

```
TRIGger:B:EVENTS:COUNt <NR1>
```

Syntax 2

```
TRIGger:B:EVENTS:COUNt?
```

Argument

- `<NR1>`

  This is the number of B edge trigger events, which can range from 1 to 10,000,000.

Example 1

```
TRIGger:B:EVENTS:COUNt?
```

This query might return `:TRIGGER:B:EVENTS:COUNT 2`, indicating that two events must occur after the A trigger before the B trigger can occur.

Example 2

```
TRIGger:B:EVENTS:COUNt 4
```

This command specifies that the B trigger will occur four trigger events after the A trigger.

TRIGger:B:LEVel

Description

This command sets or queries the level for the B trigger. This command is equivalent to selecting B Event (Delayed) Trigger Setup from the Trig menu, selecting the A→B Seq tab, and then setting the B Trig Level voltage.

Group

Trigger

Related Commands

TRIGger:A:LEVEL (see page 353), TRIGger:B (see page 413), TRIGger:B:EDGE:SOUrce (see page 418)

Syntax 1

```
TRIGger:B:LEVel {ECL|TTL|<NR3>}
```

Syntax 2

```
TRIGger:B:LEVel?
```

Arguments

- `ECL`

  This specifies a preset ECL level of -1.3 V.

- `TTL`

  This specifies a preset TTL level of 1.4 V.

- `<NR3>`

  This is the B trigger level, in volts.

Example 1

```
TRIGger:B:LEVel?
```

This query might return `:TRIGGER:B:LEVEL 173.0000E-03`, indicating that the B trigger level is currently set at 173 mV.

Example 2

```
TRIGger:B:LEVel ECL
```

This command sets the B trigger level to -1.3 V.

This command sets the B trigger level to 1.4 V.

TRIGger:B:STATE

Description

This command sets or queries the state of B trigger activity. If the trigger B state is on, the B trigger is part of the triggering sequence. If trigger B state is off, then only the A trigger causes the trigger event.

Group

Trigger

Related Commands

TRIGger:A:MODe (see page 379)

Syntax 1

```
TRIGger:B:STATE {ON|OFF|<NR1>}
```

Syntax 2

```
TRIGger:B:STATE?
```

Arguments

- `ON`

  This indicates that the B trigger is active and in conjunction with the A trigger causes trigger events.

- `OFF`

  This indicates that only the A trigger causes trigger events.

- `<NR1>`

  A 0 turns off the B trigger; any other value activates the B trigger.

Example 1

```
TRIGger:B:STATE?
```

This query might return `:TRIGGER:B:STATE 0`, indicating that the B trigger is inactive and that only the A trigger causes trigger events.

Example 2

```
TRIGger:B:STATE ON
```

This command sets the B trigger to active, making it capable of causing trigger events.

TRIGger:B:TIMe

Description

This command sets or queries trigger B delay time. Trigger B time applies only if TRIGger:B:BY is set to TIMe. This command is equivalent to selecting B Event (Delayed) Trigger Setup from the Trig menu, choosing the A→B Seq tab, and then setting Trig Delay.

Group

Trigger

Related Commands

TRIGger:B:BY (see page 414), TRIGger:B:EVENTS:COUNt (see page 420)

Syntax 1

```
TRIGger:B:TIMe <NR3>
```

Syntax 2

```
TRIGger:B:TIMe?
```

Argument

- `<NR3>`

  This is the B trigger time, in seconds.

Example 1

```
TRIGger:B:TIMe?
```

This query might return `:TRIGGER:B:TIME 16.0000E-9`, indicating that trigger B time is currently set to 16 ns.

Example 2

```
TRIGger:B:TIMe 4E-6
```

This command sets trigger B time to 4 μs.

TRIGger:B:TYPe

Description

This command sets or queries the type of B trigger. This command is equivalent to selecting B Event (Delayed) Trigger Setup from the Trig menu and then choosing Edge.

Group

Trigger

Related Commands

TRIGger:A:TYPe (see page 412)

Syntax 1

```
TRIGger:B:TYPe EDGE
```

Syntax 2

```
TRIGger:B:TYPe?
```

Argument

- `EDGE`

  This sets the B trigger type to edge.

Example 1

```
TRIGger:B:TYPe?
```

This query will return `:TRIGGER:B:TYPE EDGE`

Example 2

```
TRIGger:B:TYPe EDGE
```

This command sets the B trigger type to edge.