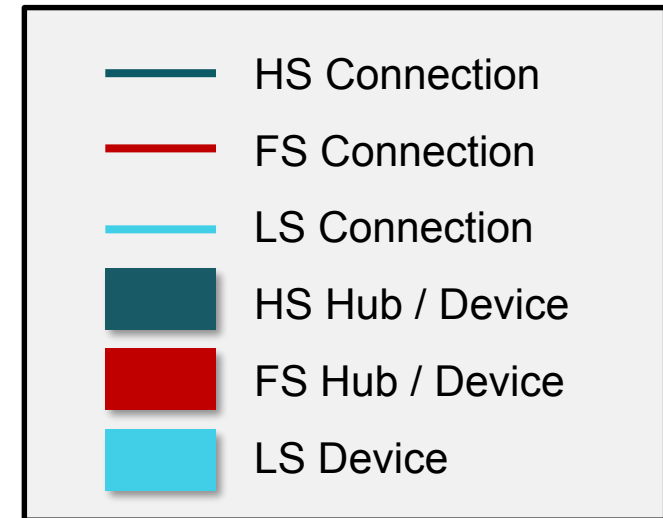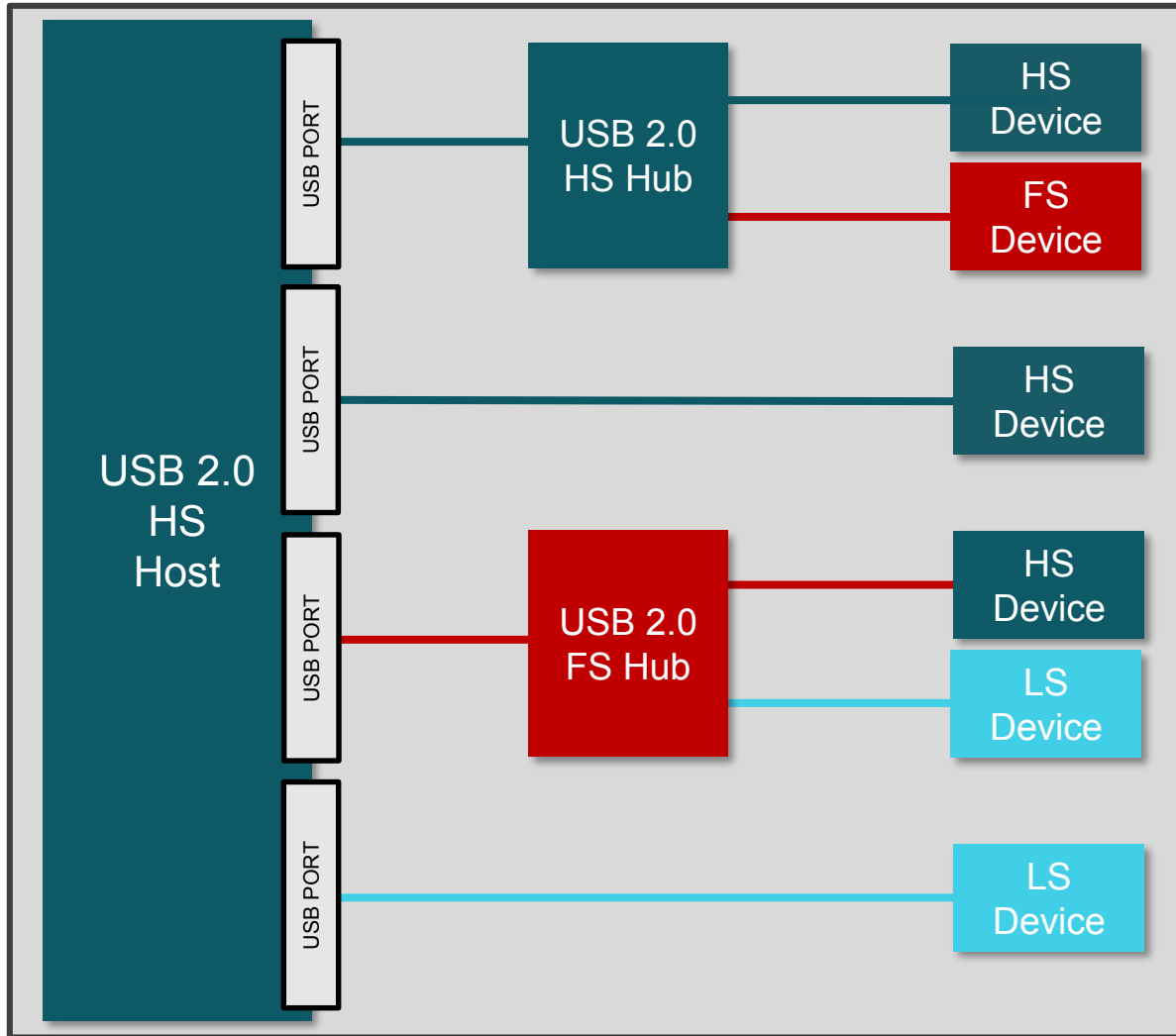# What is the USB 2.0 High-speed Detection Handshake?
TI Precision Labs – USB
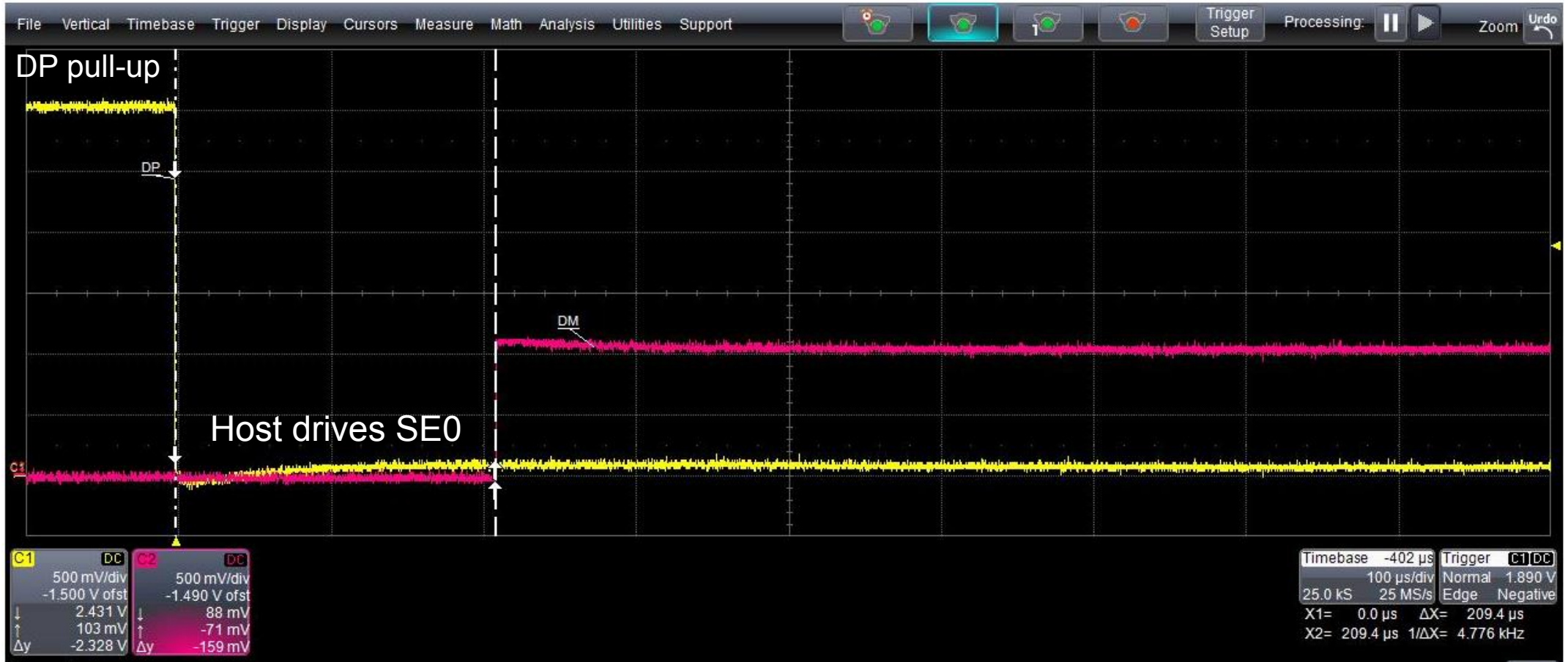
Prepared by Julie Nirchi

Presented by Nicholaus Malone

USB 2.0 ecosystem

TEXAS INSTRUMENTS
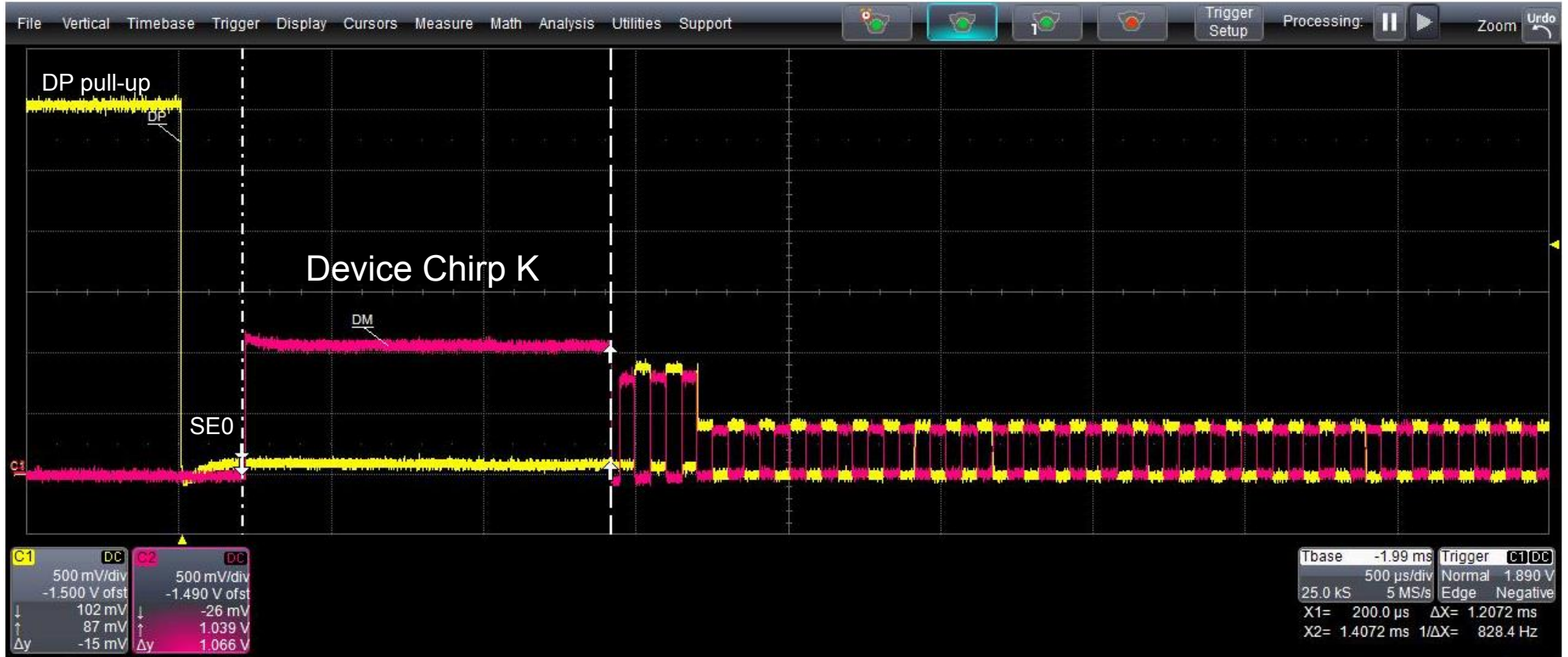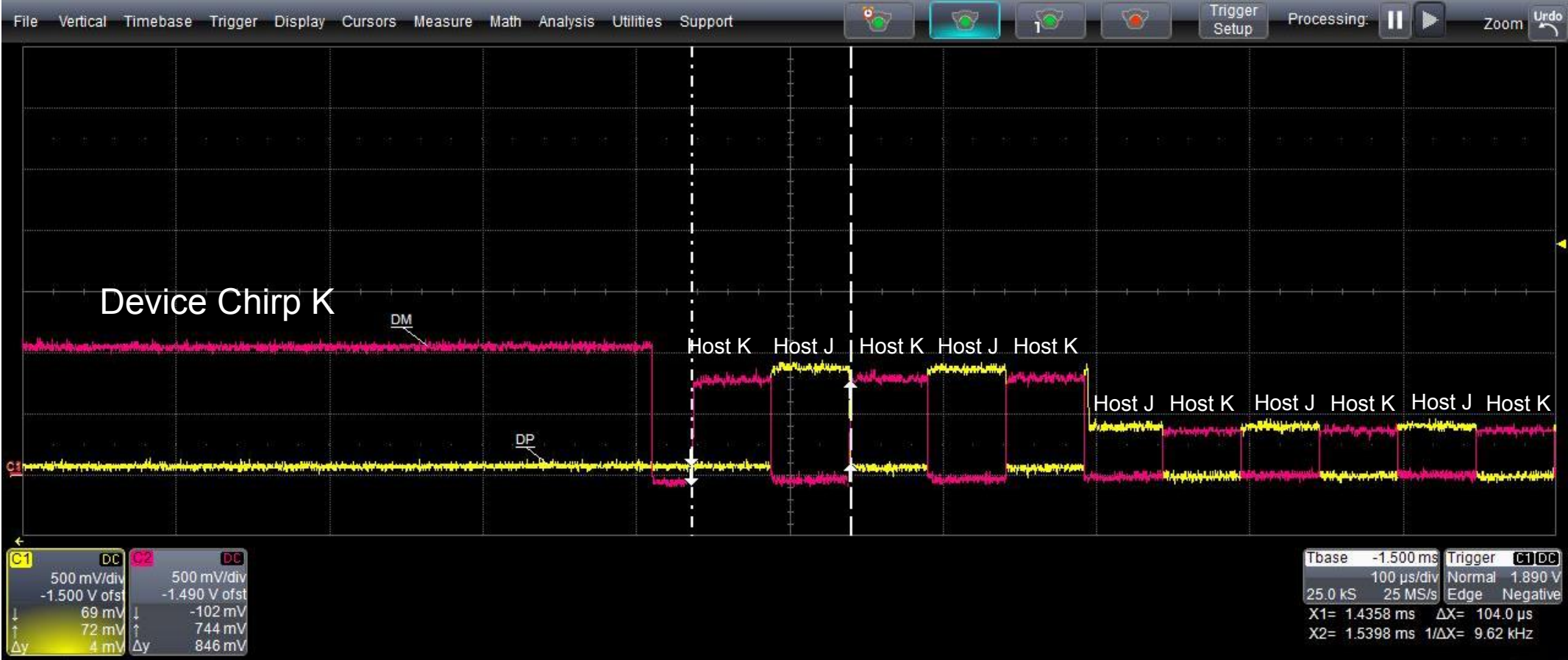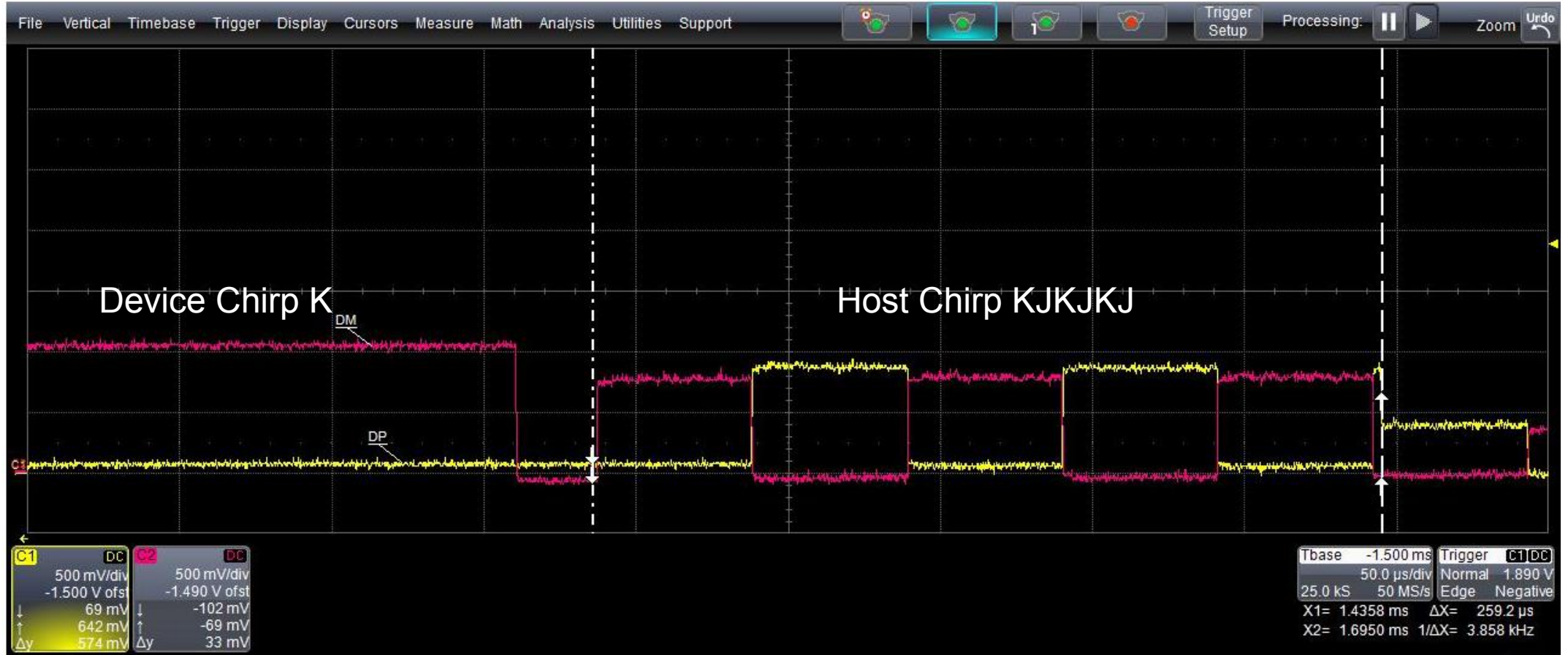
Host checks device speed and drives SE0

Device detects reset and sends chirp K

Host sends chirp KJ

Device detects host chirp KJKJKJ

TEXAS INSTRUMENTS

Device enables high-speed terminations
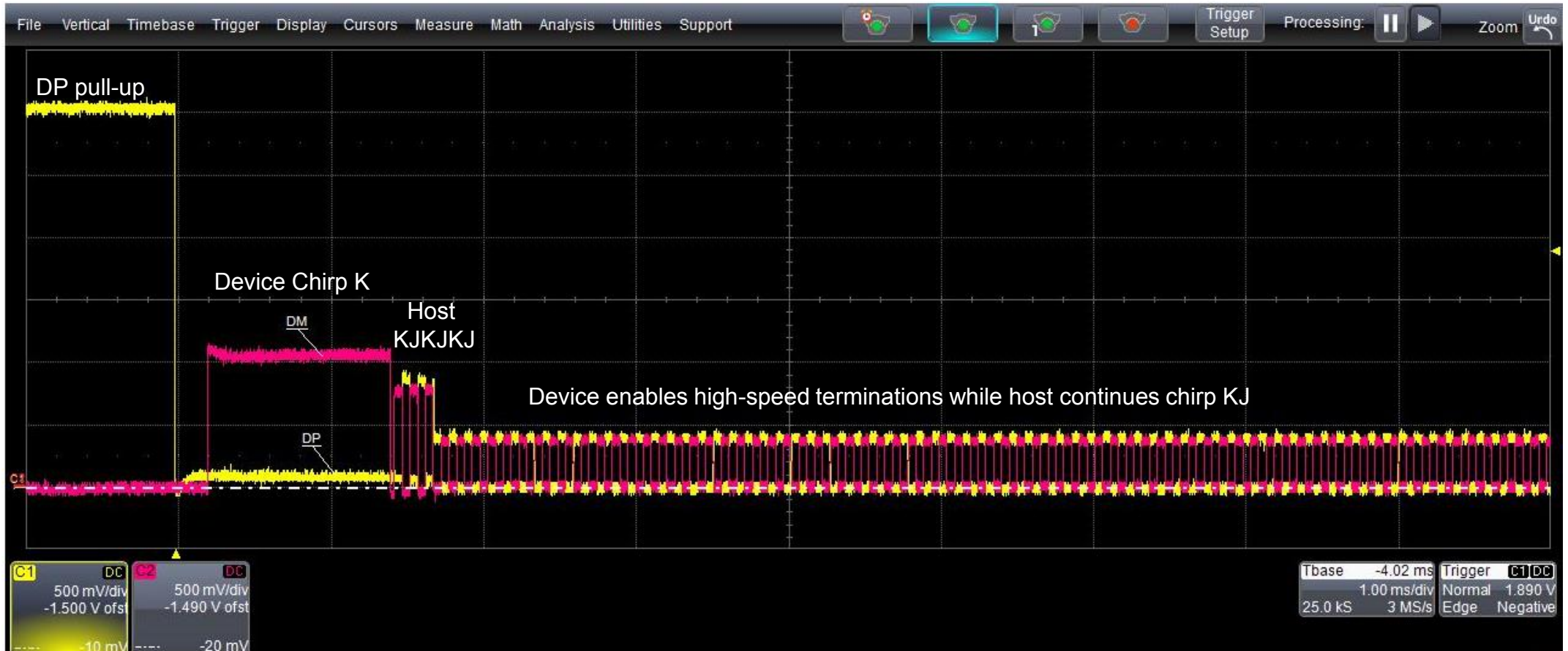
TEXAS INSTRUMENTS

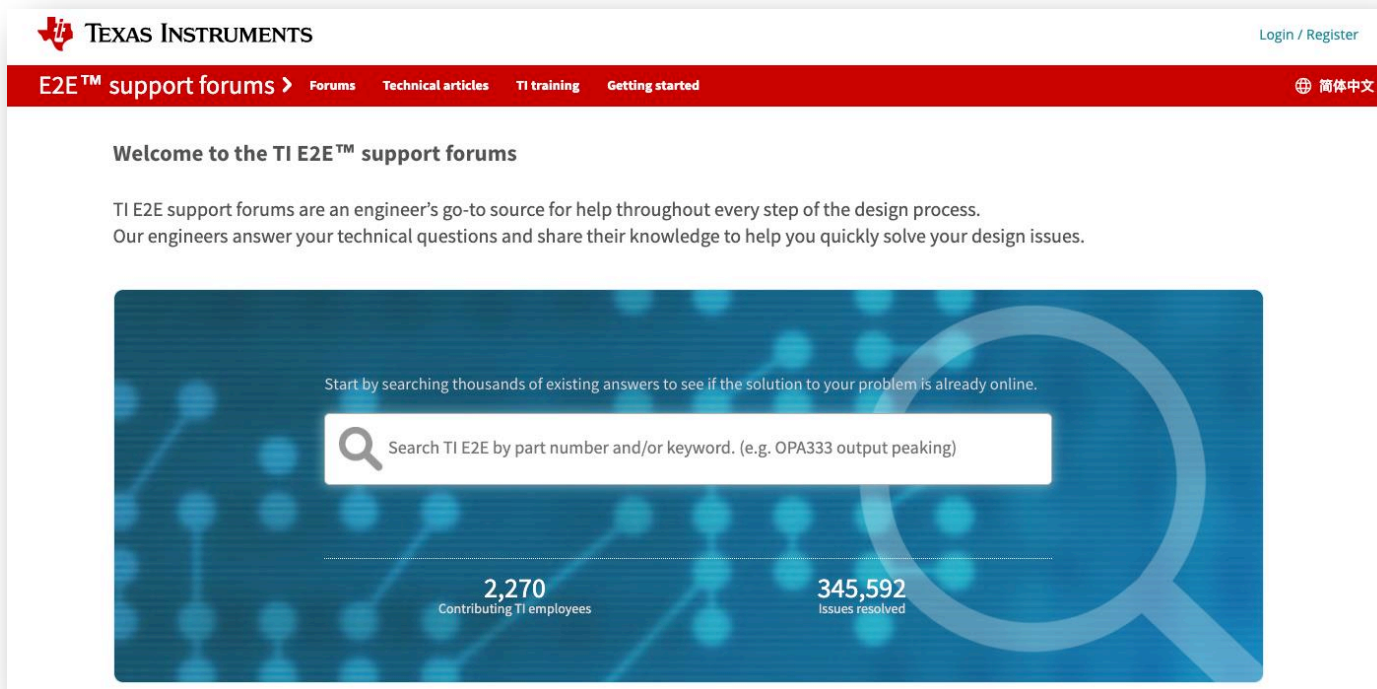# Host starts high-speed microframe SOFs.
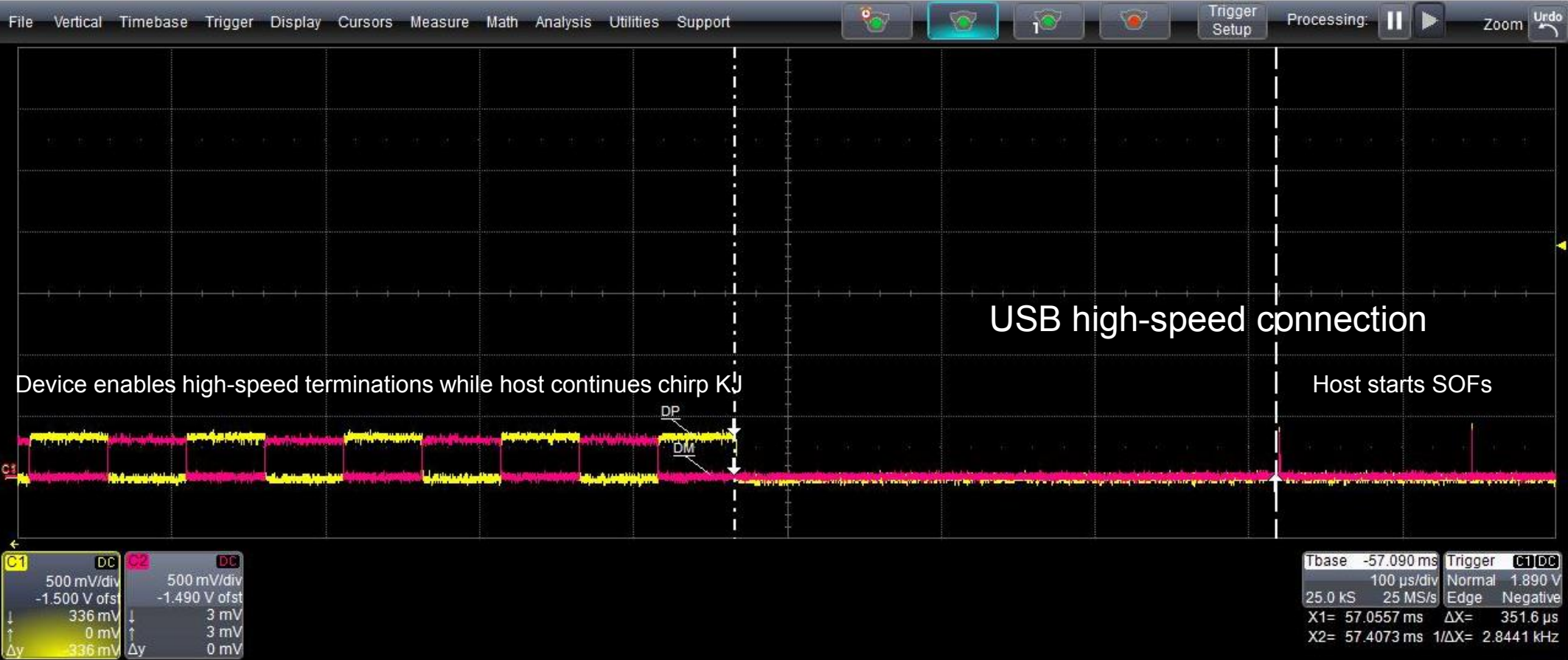
Thank you

- TI Precision Labs - What is an Eye Diagram?

- TI Precision Labs – Layout Basics for USB Designs

TEXAS INSTRUMENTS

Short quiz

True or false: USB 2.0 high-speed devices attach first at full-speed.

TEXAS INSTRUMENTS

Short quiz

True or false: USB 2.0 high-speed devices attach first at full-speed.

True. USB 2.0 high-speed devices attach first at full-speed, with a DP pull-up enabled.

TEXAS INSTRUMENTS

Short quiz

True or false: USB 2.0 low-speed devices go through the high-speed detection handshake.

Short quiz

True or false: USB 2.0 low-speed devices go through the high-speed detection handshake.

False. USB 2.0 low-speed devices can only connect at low-speed and do not participate in a high-speed detection handshake.

TEXAS INSTRUMENTS

Short quiz

True or false: all chirps in the high-speed detection handshake come from the host.

TEXAS INSTRUMENTS

Short quiz

True or false: all chirps in the high-speed detection handshake come from the host.

False. The first chirp K in the high-speed detection handshake comes from the device.

TEXAS INSTRUMENTS

Short quiz

True or false: a USB high-speed device connected to a USB full-speed port will not enter high-speed mode.

TEXAS INSTRUMENTS

Short quiz

True or false: a USB high-speed device connected to a USB full-speed port will not enter high-speed mode.

True. If either the host or the device is not high-speed capable, the high-speed detection handshake will fail and the connection will operate at full-speed.

TEXAS INSTRUMENTS