



2020

# Data Collection Modes

DESCRIPTIONS, COMMON APPLICATIONS, AND SUPPORTING  
PRODUCTS

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## Introduction

Whether you are recording one basic test without a trigger or capturing multiple events with your system re-arming itself, there are several data recording options to fit your needs. Your product's user manual should describe your setup and supported collection modes, but this article will focus on this segment of your testing process.

At DTS, we want to make sure you can confidently set up your test procedure to gain meaningful data using the best options available. This article will describe and illustrate various options like Circular Buffer, Recorder Mode, Hybrid Recorder Mode, Continuous Mode, Multiple-Events, and Auto-Arm. It discusses the difference between an event and a trigger. This document helps define what an event signal is as opposed to a data set.

Thank you for reading, and happy testing!

## What is an Event?









What is an “Event”? Something you want to capture and it can be used to synchronize time by an input to the hardware event signal, a level trigger from a sensor threshold, or a software triggering input. An event can also simply be captured without being used as a time synchronization.

## Data Collection Modes

**Note:** A trigger or event signal applied anywhere in the DAS chain is distributed throughout the system. This is also true for a level trigger.

### Legend

Each mode will have an illustration, using the codes below:

ICON	MEANING
	User Presses START RECORD
	Event Occurs
	Pre-Trigger Data
	Post-Trigger Data
	Post-Start Record Data
	Analog Data
	TRIGGER/EVENT SIGNAL Received
	Total Data Saved to DAS

### Circular Buffer Mode

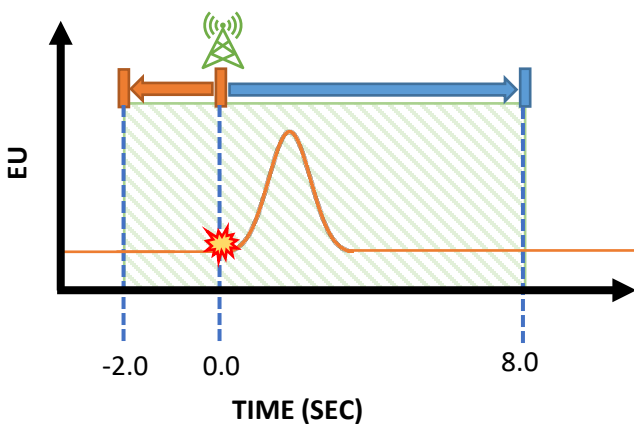
**Description:** In Circular Buffer mode, the user can program the DAS to record pre and post-trigger data. Time Zero (T=0) is marked when the trigger signal is received.

**Depends on Trigger:** **YES**

**Breakdown:** The DAS is constantly capturing data until the memory is full. Your total Data to be saved is simply the sum of both your Pre and Post Trigger time. Your trigger, therefore, is critical to retrieve your data.

**Example:** Run Test with 2 Seconds of Pre-Trigger and 8 Seconds of Post-Trigger.

Figure 1: Circular Buffer Example



ICON	MEANING
	Event Occurs
	Pre-Trigger Data
	Post-Trigger Data
	Analog Data
	TRIGGER SIGNAL Received
	Total Data Saved to DAS

### Recorder Mode

**Description:** Recorder mode starts when a Start Record signal is received and continues for the time specified in the test setup. If a trigger signal is received some-time after the Start Record, this is marked as T=0.

**Depends on Trigger:** NO

**Breakdown:** This is the simplest of modes. It captures data for the duration requested, and the time you hit Start Record is by default labeled as time zero. If you have a Trigger Signal, that Trigger Signal will mark time zero (see examples below).

**Examples:** Run Test with 10 seconds of data. Below are two examples, one with no Trigger Signal and the other with a Trigger Signal received 2 seconds after the Start Record signal is sent.

Figure 2: Recorder Mode Example (No Trigger)

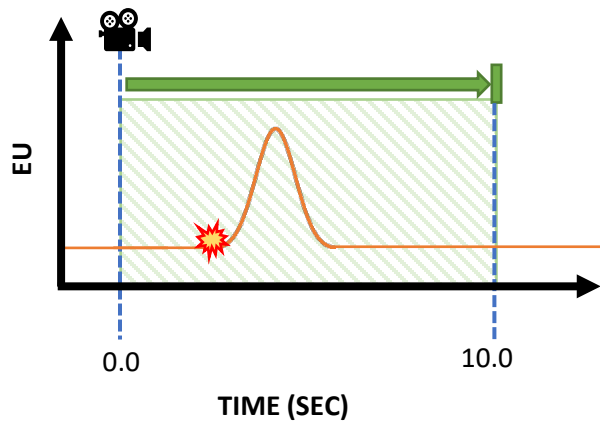
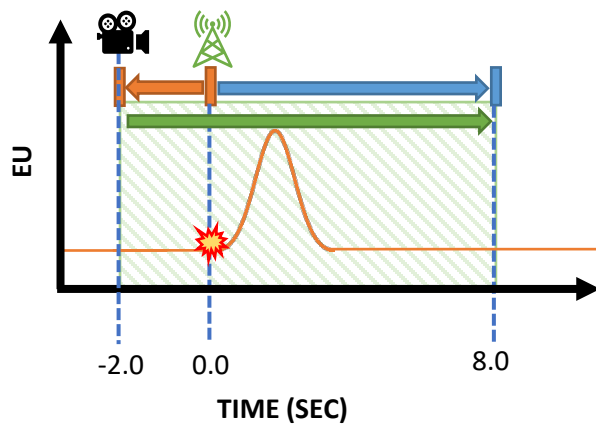


Figure 3: Recorder Mode Example (Trigger)



ICON	MEANING
	User Presses START RECORD
	Event Occurs
	Pre-Trigger Data
	Post-Trigger Data
	Post-Start Record Data
	Analog Data
	TRIGGER SIGNAL Received
	Total Data Saved to DAS

*Note: for both of these examples, the 10 Second time we requested is the same, only the time zero is affected by the trigger.*

### Hybrid Recorder Mode

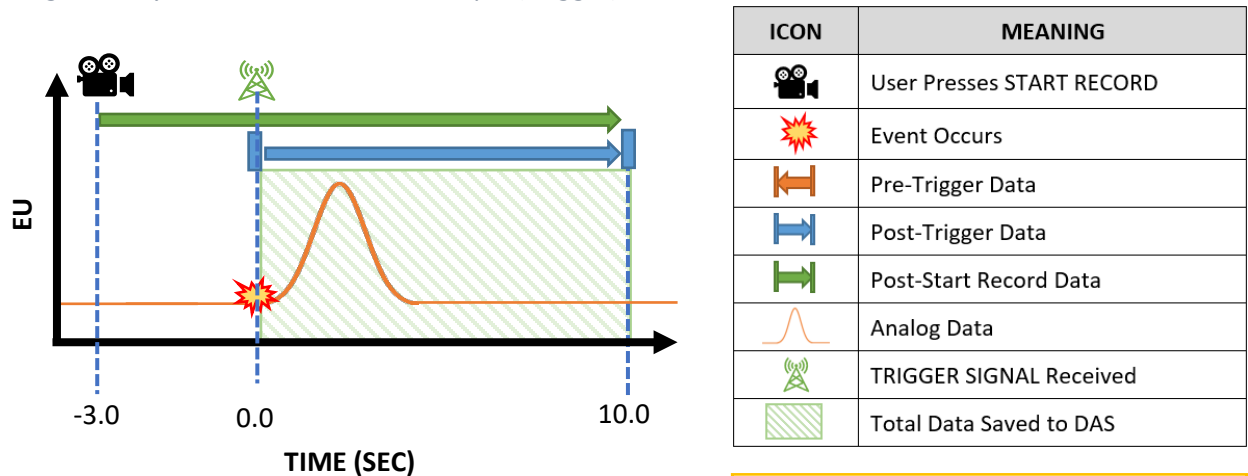
**Description:** Hybrid Recorder mode starts when a Start Record signal is received and continues until the unit receives a trigger signal and then records for the post-trigger time specified by the host software. The trigger signal marks the T=0 point, and all data recorded is available for download.

**Depends on Trigger:** **YES**

**Breakdown:** This mode allows a prescribed duration of data collection post-trigger. What makes this unique is that unlike Circular Buffer, the memory is not being written to (and used up) prior to the trigger signal.

**Examples:** Run Test with 10 seconds of Post-Trigger specified. Trigger Signal is received 3 seconds after Start Record is initiated.

Figure 4: Hybrid Recorder Mode Example (Trigger)



*Note: Since this mode captures all data in the post-trigger time, in this example a total of 10 seconds is recorded.*

### Continuous Recorder Mode

**Description:** Continuous Recorder mode starts when a Start Record signal is received and continues until the Start Record signal is released. The unit will then re-arm for another event.

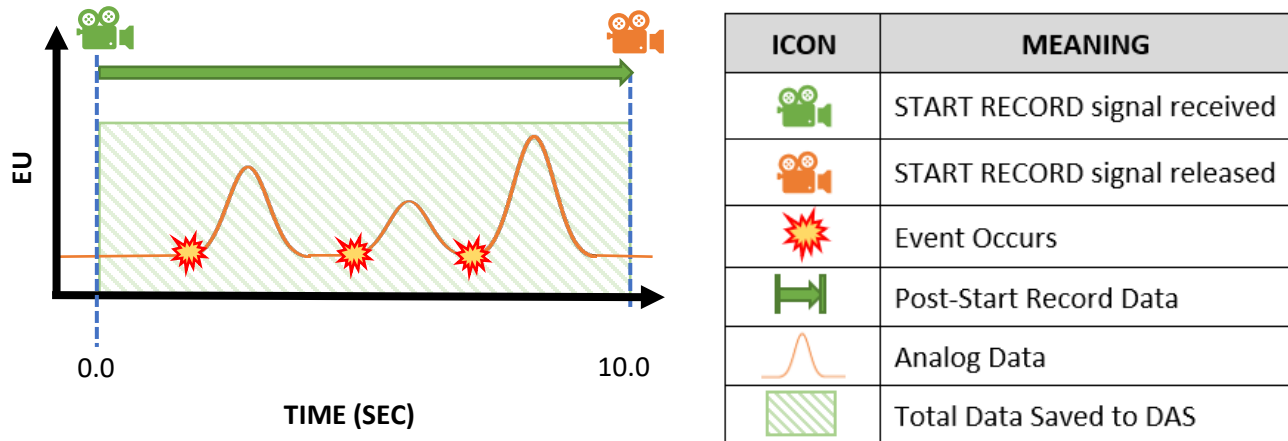
**SLICE NANO/MICRO:** The LEDs on the unit will flash blue slowly, then rapidly, and then the STATUS LED will become solid blue, indicating the unit is fully armed. The unit will continue to record new events until it records the number of events specified by the host software. If a trigger signal is received after the unit has re-armed, the unit will disarm and no longer attempt to re-arm.

**Depends on Trigger:** NO

**Breakdown:** This mode allows for multiple events of various durations to be recorded. Keep in mind, if the Start Record Signal or Switch opens inadvertently, data recording will stop.

**Example:** Run Test with 10 seconds between Start Record receipt and release. 3 events are captured during that timeframe.

Figure 5: Continuous Recorder Mode Example (No Trigger)



## Multiple-Event Modes

**Description:** Generally, SLICE data collection modes have an equivalent multi-event mode. A unit armed in a multiple-event mode will re-arm when an event completes. The unit will stop re-arming when the number of events specified by the host software has been recorded.

**Breakdown:** This means once the parameters of the recording mode of been met and completed, the unit automatically cycles through the Diagnostics and Arming phases. As it does so, it will notify you through the Status Line and via SLICEWare or DataPRO interface. Each of these tests will be a separate data file, with a number added as a suffix to your chosen test name.

## Auto-Arm Data Collection

SLICE can be placed in an auto-arm mode that will cause the unit to arm automatically when the power is cycled. The unit can be placed into this mode and record with any data collection mode.

## Need More Help?

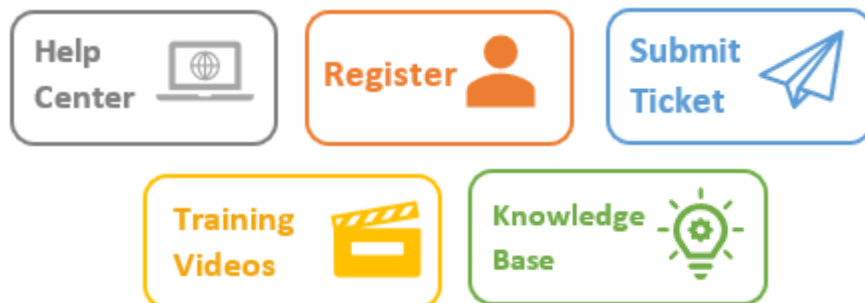
The online Help Center has additional resources to help get you up and running!

We have support engineers in multiple time zones with various backgrounds who can assist. Registering creates a profile for your setup and keeps your records/requests organized going forward. You do not need to be registered to submit a Help Ticket, but it keeps all your info in one place.

Here is how to get started. **The buttons below will take you directly to the specific web pages.**

1. Head to our Help Center main page for support resources.
2. Register as a new user.
3. Submit a Help Ticket. You can CC members of your organization, attach files, and add any helpful links.
4. Feel free at any time to check out our Knowledge Base. It has articles, videos, and breakdowns of our hardware and software, as well as general information and best practices. We are frequently updating this library to keep users informed.
5. Our Video Library has Webinar Recordings, Product Overviews, and Training. If you would like to join a future webinar, let us know.

We are looking forward to supporting your needs!



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