

# EEG Application Note

## CCRecord Module

Applies to Products: HD49x Encoders

Last Revised: March 2023

CCRecord is a software add-on module for HD49x encoders that creates real time as-run recordings of caption data running through the encoder, in a variety of popular caption file formats. The recorded caption data can come from any combination of upstream or local sources (iCap, modem, serial port), and will always reflect the data encoded on the output of the master video signal.

The recording in and out times for CCRRecord files are triggered in real time through one of four GPI switches. The switch number is configurable, to provide maximum flexibility with a variety of encoder module configurations. The switch is used to begin recording on the rising edge, and to end a recording on the falling edge. A new recording can be engaged immediately once the prior recording is ended. For GPI configuration, please see Appendix A at the end of this document. Each recorded files is uniquely named based on the ANSI timestamp string representing the beginning of the recording. When recording begins, each file begins counting SMPTE drop-frame time code at a default start time of 01:00:00.00. Other options include starting at 00:00:00.00, or using a time-of-day clock. The recording is frame-accurate from this point forward.

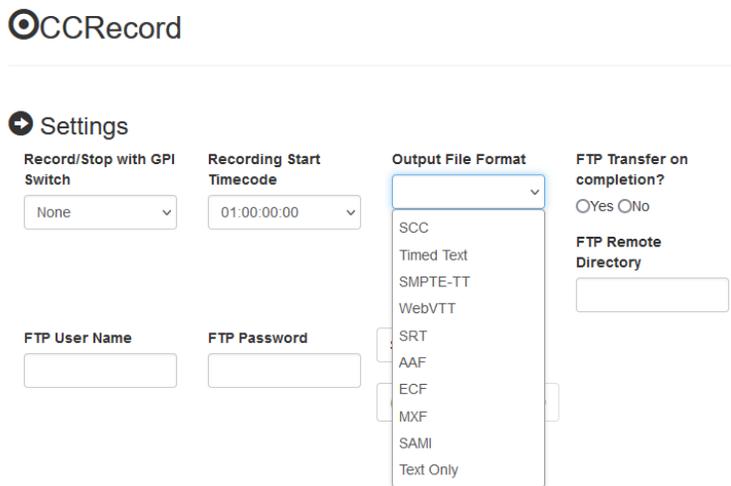


Figure 1: CCRRecord Interface Showing Supported File Formats

The standard HD49x encoders can store up to 3 GB of caption files locally, which corresponds to thousands of hours of captioned content. Caption files can be downloaded from the encoder through HTTP using the web interface, or automatically pushed on completion to a remote FTP directory.

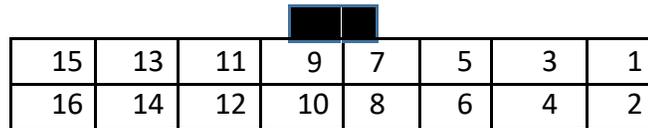
The CRecord module can be configured to export in the commonly used ECF or SCC formats for caption editing or re-encoding. These formats are compatible with the EEG CaptionTrack fix-up editor, CCPlay FilePro file-based stitching tool, CCPlay linear caption encoding software, as well as many third-party software packages. CRecord also exports into the AAF format, for import into Avid Media Composer D-Tracks, SAMI (.smi) files and the SMPTE-436M MXF format for file-based caption stitching. CRecord can also save files in two varieties of the SMPTE-2052 Timed Text format for streaming VOD applications. The “SMPTE Timed Text” entry corresponds to a rich timed text including CEA-608 tunnel data. However, supported elements of Timed Text can vary widely among decoders, especially when the TT data is created from material that is originally authored in the CEA-608 roll-up or paint-on styles. The “Simple TT” file format is a more basic XML format that converts all captions to the pop-on style and that works with a wide set of older “DXFP”-style decoders, included in products such as JWPlayer. Plant-specific customized triggering for CRecord is also possible in many cases. Examples include integration with TCP/IP-based automation systems, XDS program schedules, and customized SCTE-104 markers. Please contact EEG Support for more information.

## GPIO Pinout / Wiring Detail

The GPIO pins are located on the two 16-pin connectors on the rear panel of the unit. The top connector is used for the GPI switches and the bottom is used for the GPO switches, with the pins numbered in the following manner on each connector:

### GPI Pin Assignments

The GPIs use the upper 16-pin connector, which mates to a female IDC-16 connector. The pin assignments are given in the table below:



15	13	11	9	7	5	3	1
16	14	12	10	8	6	4	2

Pin(s)	Input
1,3,5,7,9,11,13,15	Ground
2	GPI-A
4	GPI-B
6	GPI-C
8	GPI-D
10	GPI-E
12	GPI-F
14	GPI-G
16	GPI-H

## ❓ GPO Pin Assignments

The GPOs use the lower 16-pin connector, which mates to a female IDC-16 connector. The pin assignments are given in the table below:

2	4	6	8	10	12	14	16
1	3	5	7	9	11	13	15



Pins	Output
1,2	1
3,4	2
5,6	3
7,8	4
9,10	5
11,12	6
13,14	7
15,16	8

