CLOCKIT
MASTER SLATE
ACD 201/301
Timecode Slate

1996 - 1999

Table of contents

1   General information

The new version of the Ambient master slate has various improvements in respect to previous versions due to experience gathered, and in answer to requests by customers who have sucessfully used the ACD 101 and ACD 201.

1.1   Mechanical improvements

A   **A new type of mask** for the display to improve readability in sunlight. The mask is laser cut for each segment and implements a dark background and anti-glare function. The slate does not need any sun shade.

B   **The housing has been strengthened** and made larger. No writing extension is needed.

C   **The battery compartment will take up to 9 Penlite cells** thus allowing the use of Nicads   which only have 1.2 volts. When using 8 cells a dummy battery is inserted.

D   **The writing surface is more durable and white.**

E   **There is an extra timecode in/out socket** thus freeing the LEMO interface socket for checking and setting duties.

F   **The new electronics can still be fitted in the small housing** preferred by documentary filmers.

1.2   Electrical improvements include

A   **Display now very bright** but still 9 step brightness control.

B   **Timecode generator cannot crash** even though batteries go flat during slating. Automatic charging of backup battery through separate DC/DC converter.

C   **Camera speed check,** strobe bars flicker at framerate. When viewed through camera, a bar stays still or moves if there is a difference between camera speed and framerate.

D   **Input and ext timecode framerate identified** and displayed.

E   **Timecode error displayed** in 1/4 Frame steps up to 2 Frames

F   **Reader and generator timecode displayed.** When slate is opened external timecode is displayed. When slate is closed the internal generator code is displayed.   Display playback Timecode value at slating moment. Useful when recording live sound with playback.

G   **X jam syncing of slate possible.** In other words an external 24 frame code can set a 25 frame slate code. Slate has to be set to the code required. Jamming from an external source sets the time at the zero frames point. Operators must know which codes are compatible.

H   **Optional internal Telemetry UHF receiver** for receiving timecode by radio at little extra cost.
All former clockit features have been retained and operating modes have changed as little as possible

2   User Instructions

2.1 Controls & Control elements

Viewing the slate **face on** you will find the following controls:

Bottom edge	**ON/OFF switch**
Left side	**5 PIN Lemo interface socket** **Minijack timecode In/Out socket** (ACD 301 only)
Front	**LED display** with **Anti-glare mask** **RED and GREEN** single **LED** **Writing surface for boardmarker**
Between clapstick and body	**Push button left. (RED)** **Push button right. (BLUE)** All internal setting functions are carried out using these two buttons in combination with the Dipswitches.
Right side	**ACD 201** one slider which can be moved either UP to reveal the batteries, or moved DOWN to give access to the **Dipswitches**. On the **ACD 301** you find **two sliders** on this side of the slate. The Top slider exposes the **Dipswitches**. The Bottom slider locks the battery contact strip and allows the exchange of batteries (9 or 8).
Back cover	Has a short form instruction manual laser engraved, it describes the main functions of the slate**.**

Note. On delivery of the ACD 301 there is a **Dummy cell inside** the battery compartment. This is supplied for the operation with 8 cells only. The dummy is held in place by a screw in a semi permanent fashion. Batteries ar usualy bought in 4 or 8 packs and use of rechargeable nicads is very seldom. We think 8 batteries is the best configuration and have fixed the dummy so that it cannot fall out and get lost.

2.1.1 The DIP switches

There are 12 switches and their functions are outlined in this chapter. It is important to note that changes made to the Dipswitches 1, 2 and 3 are activated only after a power-down, power-up cycle. Switches 4 through 12 take effect at once.

												OFF
												ON
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	

Framerate

SW	24 Frs	25 Frs	30 Frs	29.97 Frs
1	ON	OFF	OFF	ON
2	OFF	OFF	ON	ON

3   ON   **Drop Frame** with **29.97** and **30 frames**
        Note. Drop Frame with **24** is **slow 24 (23.98frs!)**
            Drop Frame with **25** in **Reader mode** is **Enhanced reader**
            (see section 3.4**)**

Operating modes

SW	Gen	Gen/ RTC	Read/Gen	Read __
4	OFF	OFF	ON	ON
5	OFF	ON	OFF	ON

Display modes

6	ON	**Timecode only displayed.**
		No transition to userbits when slate closed.
		Display userbits with RED button.
	OFF	**Normal Slate function.**
		Slate open Timecode display.
		Slate closed Display userbits for 2 secs,
		or userbits with RED button.

7	ON	**Clapped time shown** for 2 mins.
	OFF	**No clapped time displayed.**

8	ON	**Advance display** frames as selected by
		switches **9. 10. 11.**
	OFF	**Retard display** frames as selected by switches **9.10.11.**

	Frs	0	1	2	3	4	5	6	7
9	**1's**	0	1	0	1	0	1	0	1
10	**2's**	0	0	1	1	0	0	1	1
11	**4's**	0	0	0	0	1	1	1	1
12	OFF	**Generator TC output (Pin 5 LEMO) with own Userbits**							
	ON	**Generator TC output with reader time inserted in Userbit slot**							

2.1.2 Brightness control

Open the clapstick and hold down one button while incrementing or decrementing the brightness with the other.

The brightness of the slate can be altered in 9 steps with the Blue and Red pushbuttons. This optimises film exposure of the display and helps save batteries. Additionaly, when the brightness is at maximum there is an automatic control which reduces the brightness in 10 second cycles. When the slate is closed the internal counter counts back to 0 seconds. The display will show maximum brightness on opening again.

Due to the increased brightness of the slate, it is necessary to save batteries. In the clap mode the slate is opened and clapped usually within 10 seconds, so that this feature does not impair the maximum brightness at slating time.

Note a: When the batteries get low and don't recuperate in the time the display is off, the processor reduces the maximum brightness until batteries are changed. If you can't get 9 brightness levels it is time to change the batteries. (See chapter 2.1.4 and 2.1.5)
Note b: No external timecode should be connected in the generator mode when changing brightness otherwise the generator could be jammed if the red button is pressed while holding down the blue. In reader mode changing the brightness will not influence the generator.

2.1.3 The Red and Green LED

On the top right hand corner of the display are a Green and a Red LED which indicate the status of the generator and reader.
RED LED blinks at one second intervals. Gen ON and running but hasn't been set from an external or RTC source.
GREEN LED blinks at one second intervals. Gen ON and has been set from external source or RTC on start up.
Note. If the generator loses time due to unsuccessful ext. Jam or other problem, the Red LED will blink instead of the Green.
When the generator is set from an external source while it is running the Red LED will go on shortly and then the Green LED will blink at 1 sec. intervals.
A full on LED indicates latchup or timecode/noice present at the input. Repeat jamming process, or turn OFF then ON and reset.

Generator mode When the slate is turned ON, the Red LED will blink at one second intervals indicating that the generator is running but not set.

Generator RTC mode When the slate is turned ON the Green LED will blink indicating that the generator has beens set from the internal RTC.

Reader/Generator Mode When the slate is opened and the reader mode is active the Red LED will be ON if no ext TC is present. The Green LED will be ON indicating that an external TC is being read successfully.
When the slate switches over to generator on closing the slate the Green or Red LED will blink as described in the generator mode.

Reader Mode The Red LED is full ON when no Ext TC is present or there are reading problems.The Green LED will be full ON when an external code is being read correctly.

Low battery warning When the batteries have gone below a predetermined value or the batteries are being changed the Red or Green LED will doubleblink.

2.1.5 Changing the batteries

Change batteries when the Red LED doubleblinks. The slate's internal Nicad accumulator has a 10 minute Backup time when the batteries have been removed. The internal data is not lost during battery change.

2.1.6   Tuning the slate

The generator Xtal of all clockit units can be "Tuned" to within +- 0.1 ppm of the Clockit Controller (ACC 101) or to a fixed offset to match another machine. Full details of this process will be found in the Clockit Controller manual.

2.2 Check features

The slate can be used to implement all timecode checking functions required on the set using the internal clockit generator as a master to check all other timecode equipment as required. Error checks can be carried out without the slate jamming from the externally connected timecode.

The following checks can be implemented:

A   Framerate ------------------   identification
B   Drop, Nondrop -------------   identification
C   Error --------------------------between Slate generator timecode and any
                                externally connected timecode up to 2
                          Frames in _ fr steps.
 D   Camera speed check

2.2.1 Camera speed check ----

vertical bars flicker at fps   **slate fps**

This feature works only when no external TC connected. When viewing the slate through a camera you will see one vertical stripe. This stripe is standing still if the camera's speed matches the slates framerate. If the bar is moving left then the camera is too slow, if the bar is moving to the right then the camera is running too fast in respect to the set framerate.

2.2.2 Checks with No external TC connected

To temporarily show Userbits.
Press the RED button.

To temporarily show speed and framerate.
Press BLUE button to show the Generator Framerate and strobe bars for camera speed check.

To latch camera speed check.
Press and hold BLUE button then push the RED button, hold and release first the BLUE followed by the RED button.

To unlatch the camera speed check.
The speed check will be displayed until you press the BLUE button to unlatch the speed check again.

2.2.3 External TC framerate identification

Press BLUE button to display the Generator framerate and next to it the external TC framerate. A single bar to left of the framerate indicates the eventual error in the following ways:


```
0    1/4   1/2   1   1-1/4 1-1/2 1-3/4  2>    if external TC
```
frames error   **ext fps**   **slate fps**
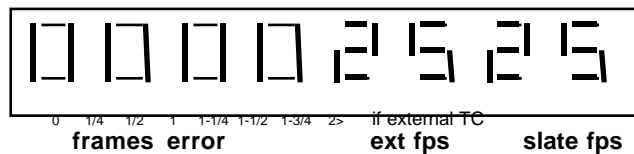
2.2.4 EXT TC error check

Bar full left indicates an error of 0 frames or less the _ frames .
4 bars from left 1 fps error.
Full right indicates 2 or more frames error.

2.2.5 Framerate identification

The ACD slate display shows the various framerates in the following way:

Display	24	25	23	29	2d	30	3d
Framerate	24	25	23.98	29.97	29.97 Drop Frame	30	30 Drop Frame

2.3 The Manual Set Mode

To enter the SET MODE press both (RED and BLUE) buttons simultaneously for appr. 3 seconds until the userbits show (one spacer dot). The left most digit will blink. You can then release both buttons. The digits can be changed with the following cursor movements:

2.3.1 Moving the Cursor

To move Right   Press the BLUE button.
To move Left   Hold the BLUE button down and press the RED button.

### 2.3.2 Changing the digit values

Increment value   Push RED button.
Decrement value Hold down RED button and decrement with BLUE.

2.3.3 Cancelling changes

Closing the slate stick at any time during the set mode immediately cancels all the current changes and reverts the slate to the state prior to the set mode.

Note: The generator still counts during set mode so no time is lost by entering and leaving set mode in the above manner.

2.3.4 The cursor ring


```
  1     2     3     4     5     6     7     8     virtual 9
```
Diagram of cursor ring
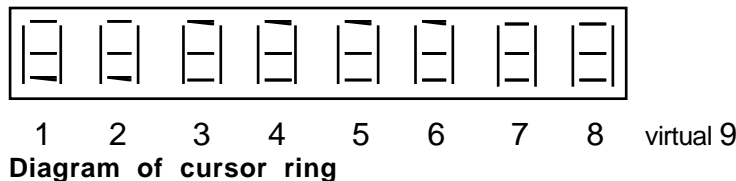
The cursor moves in ring in the following way:

First 8 user digits (single spacedots) then a position one digit to the right of the 8 userbits (pos 9) where the single spacerdots blink and the old and new userbits can be toggled to select. Then on moving the cursor one more step to the right the time display is entered (double spacerdots). Moving the cursor to the right leaves the time display through the Toggle position (pos 18) and reenters the userbit field from the left. The cursor can move in both directions to reach its required position though the left to right movement is easier to implement with the push buttons and considering one changes userbits more often then the time.

Note: The position of the cursor decides which new Data is entered into the generator.

With the cursor in the userbit or toggle userbit position, only userbits will be entered into the generator. The time which still runs in the set mode, will not have been changed.

With the cursor in the Time or toggle time position the selected time and Userbits will be entered into the generator.

Loading the selected values into the generator is implemented by holding down both buttons simultaneously till the display runs.

2.3.5 <u>Notes on selecting digits</u>

Userbit Field
The userbits have 8 digits all of which can be set to numerals 0 to 9 and various letters. Generally there is no restriction to what one selects but userbits have been traditionally used to indicate the date and/or production number, camera number etc.

In addition timecode film cameras expect to find the date in a particular configuration and may reject a timecode if the date is not written correctly. A specific configuration is necessary so that a number is recognised for what it is, for example 'day of the month'. Obviously if the year was entered into this slot the reader would reject a day of the month with a value of 96 (the year).

We recommend the following formats for the order of the digits as seen in the display.
D=Day. M=Month. Y=Year. X=Prod Number. U=Unit (Camera). R= Roll Nr.

2.3.6 <u>The Aaton configuration</u>

DD MM YY XX
When working with an Aaton or Aaton system cameras, or setting the Internal RTC this format must be used

2.3.7 <u>The AMPS configuration</u>

DD MM UR RR
Use this format when more identification numbers are required.

2.3.8 <u>The Time Field</u>

The time field has the following **fixed** configuration:
H= Hours M= Minutes S= Seconds F= Frames

HH MM SS FF

When the display is running the frame field is changing at the framerate. In the set mode the FF position can contain the following digits and letters which indicate the framerate selected by the Dipswitches or modes for setting the RTC.

2.3.9 The Frame (FF) Digits

Display	24	25	23	29	2d	30	3d	ct	cd
Fps	24	25	23.98	29.97	29.97 Drop Frame	30	30 Drop Frame	set RTC Gen. TC	set RTC from Manual Displ.

> **Note:** The framerate displayed is an indication of the dipswitch setting and cannot be changed by the cursor.

2.3.10 The ct and cd functions

The ct or **cd** function can be selected in the FF position.The slate must also be in the generator /RTC mode.

Select ct

When Load is implemented the **RTC** is set **from the generator** time and date.

Select cd

When Load is implemented the **RTC** is loaded **from the current display** time and date. (Set manually)

Select Fps (Dipswitch value shown)

When Load is implemented only the **generator is loaded** with the selected data.

2.3.11 Setting the generator

There are three settings of the dipswitches in which the generator is active.

A   Generator Mode
B   Generator/ RTC Mode
C   Reader/ Generator Mode

In Generator   Mode

On power-up the generator starts counting from 00.00.00.00 .and the userbits are 00.00.00.00. The Red LED blinks.
Go to set mode. (See 2.3)
Set user bits as above and move cursor to time frame.
Set time value and verify framerate in last 2 digit positions.
To LOAD press both buttons simultaneously till display runs.
Userbits can be loaded without changing time by selecting the userbits and loading with the cursor in the userbit display.

In Generator / RTC Mode

On power-up the generator is loaded with the RTC time and date values. The Green LED blinks.
The framerate is as selected by the dipswitches.
The values entered by the RTC will be overidden by a manual set as above or by jamming from Ext TC.

In Reader / Generator Mode

> The generator cannot be loaded in the Reader/Generator mode.
> Select Generator Mode, then Load the generator and change the
> dipswitches back to Reader/Generator Mode. (Dipswitch pos 4.5.
> goes from Off. Off to On. Off)
> When rejamming generator change dipswitches to generator mode,
> rejam and change dipswitches back to Reader/Generator.

Note: We recommend that the slate is used as master in this mode. It is easier to
rejam the camera and recorder than changing the slate's dipswitches each time.

2.3.12   Setting the realtime Clock   (RTC)

The RTC can only be set with the slate in generator RTC mode

To enter values from running generator,

> Go manual set mode.
> Check that userbits have DD.MM.YY.XX format
> move cursor to FF position without changing the display.
> Select ct.
> Load by pressing both buttons till display runs.

To enter values from selected display

> Go manual set mode
> Enter date
> DD. MM. YY.XX   XX don't care
> Enter time
> Move cursor to pos FF select cd
> Load by pressing both buttons till display runs

Note. If framerate is selected in the FF pos then only the generator will be loaded.

2.4   Jamming the generator from external TC

The slate must be in the Generator or Generator/RTC mode.

> Connect external TC.
> Verify framerate and error with the blue button as in 2.2.2 and 2.2.3.
> While holding down Blue button tip Red button ON shortly.
> Red LED goes on then the Green LED blinks.
> Check frame error with Blue button again.
> The error bar should be on the far left.

Note1. The generator always runs with the framerate selected by the dipswitches.
Thus X jamming of framerates is possible. In other words a camera
runnning at 24 fps can jam a 30 fps slate.

Note2. The X jamming and the error check takes place at the 00 Frame transition.
Thus the error check works correctly between timecodes of different
framerates. A 24 fps timecode running with a 30 fps timecode will show no
error if the 00 frame points are coincident in time.

2.5. Setting the generator from an ASCII source

The Master slate is fully Aaton compatible and can be set by the **Aaton Origen C** or by the **Ambient Controller ACC 101** using the ASCII protocoll.

The ASCII protocol enquires the time and userbit values from the slate, it checks the error and reloads the external time value at the 00 frame transition point on initialisation.

> Connect the ASCII Device
> Check error
> Initiate reload
> Red LED goes ON, then the Green LED blinks.

3 Operating modes

3.1 Generator Mode

OFF

4 5 ON

The Clockit master master slate contains a very accurate timecode generator which drives the display. When the slate is synchronised to a film camera or Nagra recorder, the timecode will not drift off more than 1 frame in 10 hours*. Other timecode machines which do not have such accurate Timecode generators such as DATs and video recorders may have to be synchronised every hour. We recommend the Lockit box as an accurate timecode and videosync source for Audio or video recorders.

*Note:
Clockit units running together do not drift apart more then **1 frame in 24 Hours**. When Clockit units are used in combination with other timecode equipment calibration errors can lead to increased TC-drift necessitating rejaming more frequently.

The Clapping sequence is as follows

Open slate -- The Timecode is displayed
Close slate -- The Timecode is frozen for 3 frames, then the userbits are
displayed for 3 seconds.

When switch 7 is ON the clapped time is displayed for 2 mins at reduced brightness after the userbits are shown. This value can be logged by the Continuity/Script person.

Traditionally the timecode in the master slate display is used to represent the timecode in the Audio machine for syncing purposes. It may or may not have the same framerate as the Filmcamera. The framerate should be chosen so that the 00 frame point in Recorder and camera is identical, assuming no timecode error. See the following table:

| Film Camera Video Camera	fps fps	24	25 25	23.98	30	29.97
Master Slate NTSC Video PAL Video	fps fps	30* 25	25	29.97	30* 25	29.97

* Dat recorders Must be "pulled up", in other words run at 30 fps instead of 29.97 fps. The word clock will run faster in the recording process and be pulled down to 29.97 fps to run in sync with the Telecine which transfers the film, which was shot at 24 fps at 23.98 fps to be in sync with NTSC colour video at 29.97 fps.

Note 1: The use of drop frame codes in the recording process is not recommended.

Note 2: Some filmcameras have a 23.98 fps framerate. Audio recorders can then use 29.98 fps TC. Recordings can then be synchronized with the Film (shot at 23.98 fps) without the need to pull down during the TeleCine process.

3.2   Generator RTC Mode   OFF

                                                                ON

                                    4 **5**

This mode has the same function as the generator-only mode with the difference that on power-up of the master slate the RTC time and date is loaded into the Generator.

3.3   Reader/Generator Mode   OFF

                                                                ON

   **4** **5**
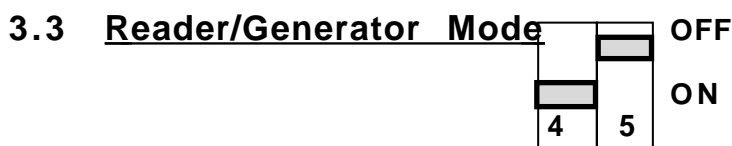
In many film situations there is a requirement for 2 timecodes to be displayed. In the classical situation a playback with timecode is being played in a scene where at the same time sound is being recorded.

The master slate when opened, displays the Playback timecode (ext TC) connected by cable or transmitted by radio, thus facilitating syncing playback to picture. When the slate is closed the generator time is displayed thus giving a timecode value corresponding to the time on the recorded tape.

Note. When switch 7 is ON the playback time value at the moment of closure of the slate is displayed for 2 mins after the userbits. This value can be logged by the Continuity/Script person.

Feature: With dipswitch 12 ON the TC out signal (pin 5 LEMO) contains the generator time and the reader time in the generator userbit slot. This TC could be transmitted for logging purposes.

3.4   Reader Mode   OFF

                                            ON

                                4 **5**
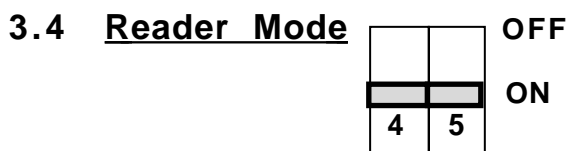
In this mode the slate is a reader only and can be used in conjunction with a radio link or cable to display Playback timecode in a videoclip or multicamera shooting situation.

When the slate is opened the timecode is displayed.

When the slate is closed the userbits of the Ext TC are displayed.

This function is like the generator mode only the timecode is coming from an external source.

Note. The dip switches 1,2 & 3 should be set to OFF, OFF and ON giving a meaningless setup of 25 fps Dropframe. This setting only has meaning in the reader mode where the reader will then read forwards, backwards and up to several times normal speed.

4   New Features

4.1   „JAMES BOND" feature

Due to a request from Chris Munro the sound recordist on „Tomorrow Never Dies" we implemented the following feature.When the slate is closed the frame freezes as usual **but glows at maximum brightness** till the userbits show. The result is that an additional optical signal is given to indicate clapstick closed, which is sync with the sound of the slate and can be used for syncing up rushes. If the clapsticks cannot be seen easily the flash will help find the sync point. **This feature can be turned off by removing the back lid and sliding the red switch at the top of the printed circuit board to the left. To the right is on**.

Although the flash will render the timecode on the display unreadable at the moment of closure the timecode will be displayed at selected brightness up to this time, allowing the timecode value to be read until the slate closes.

4.2   Operating Note

The slate can be used to show the camera the userbits before rolling over. This is done by pressing the RED button under the clapstick. This will become useful in the near future to display the **Event number** which is a unique number for each audio recording in the userbits. This number can be slated to the camera in advance thus showing the event number on film like the take number written on the slate.

4.3   CLOCKIT Radio Slate

The CLOCKIT Radio Slate is a combination of a small UHF telemetry transmitter powered by a 9Volt battery and a receiver built into the Masterslate. This makes the unit more compact than external receivers and easier to use. The range can be up to 200 meters but in difficult conditions it is typically 50 meters.

4.3.1 Transmitter

The transmitter is built into a milled aluminium case which is very strong. A sliding lid exposes the battery compartment. The battery can be removed by levering out or shaking. The on/off switch and the antenna socket is on the other end.**The longer the led stays on after switching on the unit, the lower the battery voltage**. The led stays permanently on when the battery has reached 5 volts. The battery should then be changed, but the unit may still work.

4.3.2 Receiver

The receiver is built into the slate and can be **turned on and off with the yellow switch under the slider to the right of the dip switches**. The switch removes the supply, and the timecode line from the TC input when switched off. The reason for this is to remove receiver noise from the input when the transmitter is not sending timecode.

Note: With the receiver on and the transmitter off there will be noise in the timecode input line making the led glow red (see 2.1.3). **In the generator mode the radio receiver must be switched off to jam the generator through the Lemo socket as the noise otherwise corrupts the incoming timecode signal.** Of course the generator can be set from timecode received by the receiver but not the socket and the receiver at the same time.
If the timecode transmitter is on but no timecode is being transmitted then the noise output of the receiver will be much less. **Always switch off the receiver when not in use.**
When receiving timecode from the radio link the slate generator also can be jammed from this timecode or the slate can run in both reader and reader/generator modes.

Note: Some Steadycam and camera focus remotes use the same frequency as our timecode module, leading to poor reception and low range
(interference).

4.4 Large Writing Sleeve

Due to users requests we offer a larger writing sleeve for the ACD master slate. The width is a standard 11 inches „Fits in a front box" and the surface is covered with a non reflective laser engraved label. Standard boxes are etched in the surface.

Note: The writing surface is similar to Formica and can be dry wiped clean. If the surface gets grey after frequent use it can be cleaned occasionally with spirits or acetone.

Note: Too much cleaning with acetone or agressive solvents may damage the writing surface!!

5   TECHNICAL DATA:

5.1   Mechanical Specification

Dimensions	ACD 201	250 x 130 x 26 mm
	ACD 301	250 x 160 x 26 mm
Weight	ACD 201	980 g with 6 batteries
	ACD 301	1100 g with 9 batteries

5.2   Electric specification

Current consumption

Display OFF	30 mA
Display level 9	500 mA

5.3   SIGNAL description:

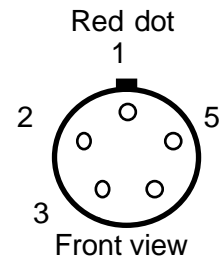The ACD 201 / 301 Generates all TimeCodes according to SMPTE / EBU standards.

TC - IN	0.1 to 5 Volt pp
TC - OUT	1 Volt pp
AATON (ASCII)	TTL Level
TUNE OUT	TTL Level

5.4   Plug description:

LEMO 5 PIN

Pin	SIGNAL
1	GND
2	TC- IN
3	ASCII I/O
4	TUNE OUT *
5	TC- OUT

Note: No external DC input as indicated on slate back panel

Red dot
1
2   5
3
Front view

MINIJACK SOCKET

Pin	SIGNAL
TIP	TC - OUT
RING	TC - IN
SHAFT	GND (SHIELD)

We wish you sucessful shooting and in case you have any questions please don't hesitate to get in touch with us.

CLOCKIT RADIO SLATE   SUPPLEMENT

The clockit radio slate is a combination of a small UHF telemetry receiver powered by a 9Volt battery and a receiver built into the Masterslate. This makes the unit more compact than external receivers and easier to use. The range can be upt to 200 meters but in difficult conditions it is typically 50 meters.

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The transmitter is built into a milled aluminium case which is very strong. A sliding lid exposes the battery compartment. The battery can be removed by levering out or shaking. The on/off switch and the antenna socket is on the other end.**The longer the led lights on switch on the lower the battery voltage. The led stays permanently on when the battery has reached 5 volts. The battery should then be changed but the unit may still work**

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When receiving timecode from the radio link the slate generator also can be jammed from this timecode or the slate can run in both reader modes.
Note some Steadycam and camera focus remotes use the same frequency as our timecode module leading to poor reception and low range, (interference). If problems arise frequently the frequency can be changed

LARGE WRITING SLEEVE.
Due to users requests we offer a larger writing sleeve for the ACD master slate. The width is a standard 11 inches ,, Fits in a front box ,, and the surface is covered with a non reflective laser engraved label. Standard boxes are etched in the surface.

Note. The writing surface is similar to Formica and can be dry wiped clean. If the surface gets grey after frequent use it can be cleaned with spirits or acetone occasionally. Note: Too much cleaning with acetone or agressive solvents may damage the writing surface!!

ATTENTION BATTERY POLARITY   Please read carefully

There have been cases of cells leaking in the ACD301. This is due to the cell being inserted the wrong way round (reversed polarity). As the battereies go down increasing current is taken by the DC/DC converter.

THIS REVERSE CHARGES THE CELL WHICH GETS HOT AND LEAKS. CORROSION AND A BIG CLEAN UP ARE THE RESULT!!

Up to now there was no way to check polarity after insertion, except care to make sure that the cells were in the right way.

Now with the BATTERY VOLTAGE DISPLAY you can be certain that after loading new batteries The cells are in the right way!!

- **LOAD BATTERIES TAKING CARE POLARITY IS CORRECT**
- **PRESS BLUE BUTTON FOR BATTERY MEASUREMENT**
- **VOLTAGE MUST BE 12 VOLTS OR OVER**
- **IF 9 VOLTS SHOW ONE CELL IS REVERSED**
- **IF 6 VOLTS SHOW TWO CELLS ARE REVERSED**
- **IF IN DOUBT OPEN BATTERY COMPARTMENT AND RECHECK**

!!NO WARRANTY REPAIRS ON LEAKED CELL DAMAGE !!

 Ambient Recording Aug 2001. Email info@ambient.de