Clockit Timecode
ACN-TL TinyLockit

Rev. 3.11

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1. Introduction

As all Ambient Clockit devices the TinyLockit provides a rock solid, highly accurate, temperature compensated time code generator.

Except for the sync signal output, it comprises the full functionality of its big brother, including ACN (Ambient Clockit Network) support, metadata transfer and logging. These network capabilities also allow the TinyLockit to be a fully functional, generator buffered time code transceiver. This provides the stability of an Ambient Lockit Generator with the flexibility of a wireless TC system but without the fear of dropouts.
In addition, it also offers most features of the former ALL601, such as variable time code output level for recording TC on audio track and time code conversion between LTC and MTC so it serves for synchronizing an audio workstation or converting playback MIDI time code to LTC.

The second Lemo connector is used for TC or communications and can be configured as USB, RS232, GP I/O or switch.

As known from the ACL 204, the user interface is easy and intuitive to use.
Due to its smaller form factor the ACN-TL is especially suitable for applications on small cameras, but also on cameras or in setups where a sync signal is not required, it is a handy solution. Thanks to the machined, pearl blasted and anodized aluminum body the TinyLockit can easily withstand the roughest production conditions.

2. Package Contents

- ACN-TL synchronizer
- Manual

3. Safety instructions

For your own safety and trouble-free use of your TinyLockit ACN-TL please carefully read through the instructions below. Always keep a copy of these instructions and hand them out with the unit to other users.

This unit is exclusively intended for indoor use. Keep it safe and away from water, rain and humidity and dry under all circumstances even when powered off. Clean gently with a slightly moistened cloth and never let water, detergents or liquids of any kind get into the unit as this will imply the risk of short circuits and electrical hazard.

Keep distant from sources of heat and never expose to direct sunlight. Admissible ambience temperature is from +5° to +50° Celsius.

Do not throw or expose to mechanical impact and keep it safe from hard vibrations.

Only use genuine accessories such as cables antennae etc. which have been supplied by an authorized dealer. Always observe integrity and the pertinent compatibility with all units connected to.

Do not perform software updates in situations the integrity of mains supply can not be granted such as thunderstorms and remove connections from and to all devices directly or in directly connected to mains.

Only use intended batteries type Micro AAA with 1.5V. Watch correct polarity when inserting the batteries, instructions can be found in the manual and on the device itself. Disregard of handling may cause battery leakage or even risk of explosion.

To maintain secure electrical contact the batteries are loaded with high spring tension and can shoot out of the compartment if opened without attention. Always secure the outer battery contact and release slowly when accessing the compartment.

Proper recycling of used batteries might mandatory be instructed by local law. Please check for requirements and dispose at foreseen institutions. With regard to environment only dispose completely discharged batteries.

When powering from external sources remove the batteries. Pay attention to the use of LPS sources in compliance to part 2.5 of EN 60950-1.

When using the wireless connection of the TinyLockit ACN-TL place it centrally and keep it distant from sources of possible interference such as microwaves or electrical devices with large metal surfaces.

If possible always use the integrated antenna. If the application of an external antenna seems mandatory only use the original part directly attached to the socket. Extension or use of 3rd party accessories is not licit.

Never open the unit. Inappropriate and unauthorized access will void the warranty and imply possible risk of harm to the user.

When disposing the unit follow the legal requirements for recycling electronic equipment.

4. Powering

The ACN-TL can be powered:

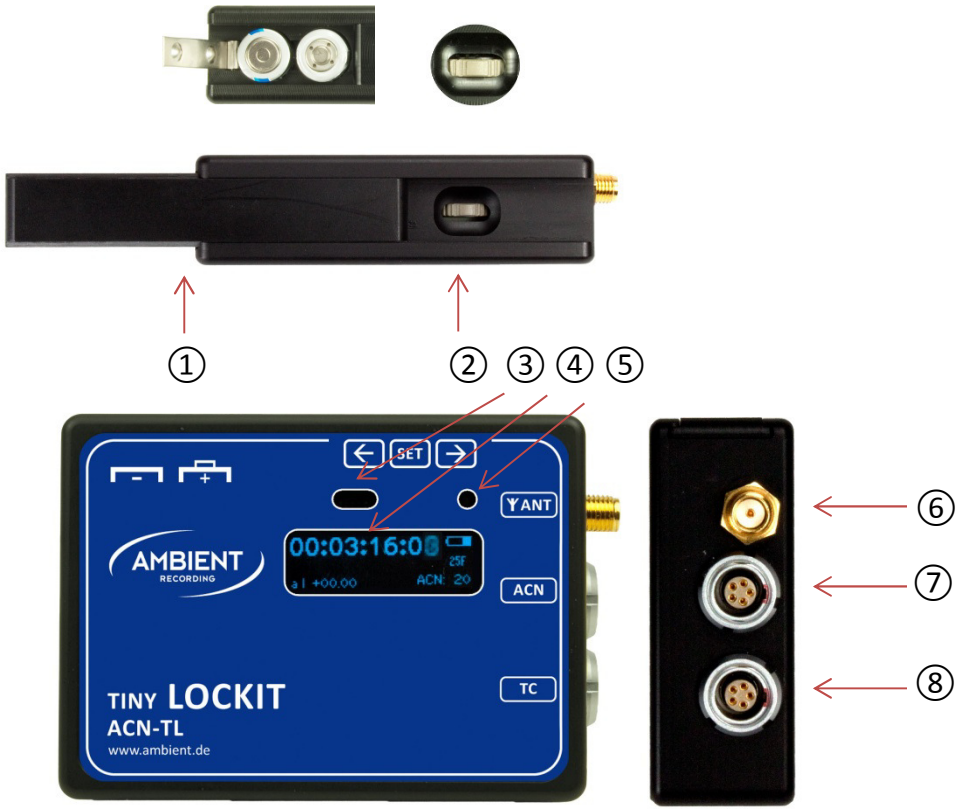
- by 2 pcs. Type Micro AAA batteries (Alkaline, NiMH rechargeable or Li-Ion). Set correct battery type in configuration for reliable low voltage warning.
  No charging function for rechargeable batteries when powered from external.
  Pay attention to insert with correct polarity as shown on label, insert outer with “+” first, inner with “-“ first. Push down battery hinge and close slider.
  Or:
- 5 to 18 Volts DC via pin 4 of Lemo/TC socket
  Or:
- 5 Volts DC via the USB socket.

If powered from USB, USB is displayed in the upper right corner of the display instead of the battery symbol.

If powered from external on Lemo/TC pin 4, EXT is displayed in the upper right corner of the display instead of the battery symbol.

Note: current time code is lost when power is removed. The settings are stored, the unit will power up with the last configuration used.

5. Description



① Battery compartment slider to be pushed left/right for access to switch or batteries

② Configuration switch (further “config switch”, ↓ for pushing in, ↔ for toggle left/right)

③ IR transceiver, used to set and check the ACN-TL from the ACC501 controller

④ Display

⑤ Signal LEDs

⑥ External antenna connector

⑦ Lemo 5-pin socket Lemo/ACN: time code in, out / RS232 serial port tx-rx / USB / GPI/O / Switch function / DC-out

⑧ Lemo 5-pin socket Lemo/TC: time code in, out / ascii / tune signal / PPF / DC-in

6. Setup Menu Diagram

When entering a menu, the active parameter setting is highlighted.

MAIN DISPLAY, showing time code, frame rate, sync rate, jam mode, network channel, battery status

↓ push select switch down to enter main menu and to select options, toggle left/right to navigate

↓

GEN	↓	JamTC ↔ Edit ↔ Offset		
	↓			
	JamTC:	AUTO ↔ OFF ↔ manual/once		
	↓			
	Edit:	HH:MM:SS:FF		
	↓			
	Offset:	+/- 00.05 frames		
	↓			
	UB	JamUB ↔ Edit-UB ↔ EXIT	↓	
			JamUB:	normal ↔ manual ↔ insert
			Edit-UB:	00:00:00:FF
			EXIT:	back to main menu
↓				
SYNC	↓	PPF ↔ OFF		
	↓			
	PPF:	1x ↔ 2x ↔ 4x	↓	HIGH ↔ LOW
	↓			
	OFF:	NO SYNC OUTPUT		
↓				
TC	↓	FPS ↔ MTC ↔ Level		
	↓			
	FPS	FPS: 23.976 ↔ 24 ↔ 25 ↔ 29.97 ↔ 30 ↔ 29.97D ↔ 30D		
	↓			
	MTC	MTCout ↔ MIDI>LTC ↔ LTC>MIDI		
	↓			
	Level	TC level Lemo/TC: 0 dB to -45 dB		
↓				
SYS	↓	Config ↔ INFO ↔ Factory reset		
	↓			
		Display ↔ Lemo/ACN ↔ BAT		
	↓			
	Display:	Brightness: 0…↔5↔…10	↓	AutoOff: never ↔ 5sec ↔ … ↔ 5min
	↓			
	Lemo/ACN:	USB: MTC ↔ COM		
	↓			
	BAT	Battery type: Li ↔ Alk ↔ NiMH		
	↓			
		INFO: displays device information: serial no., firmware version, mac address		
	↓			
		Factory Reset: loads default settings		

↓

ACN ↓ MODE

↓

OFF ↔ JAM ↔ TX ↔ RX

↓ ↓

MODE↔CHNL↔ANT↔PWR↔SYNC

MODE ↓ Back one level to mode select

↓ ↓

JAM Mode for remote jamming of ACL 204

CHNL Select ACN channel 11 to 26

↓

C_JAM Mode for continuous jam / autosync

ANT Select antenna internal ↔ external

↓ ↓

TX / RX Mode to transmit external recrun TC
Mode to receive free- or recrun TC

PWR Select RF output power 8 to 18 dBm

↓

SYNC Send sync broadcast: yes ↔ no (JAM)
Start continuous jam: yes ↔ no (C-JAM)
(not available in TX / RX)

↓

EXIT Return to main operation display

7. Menu Description

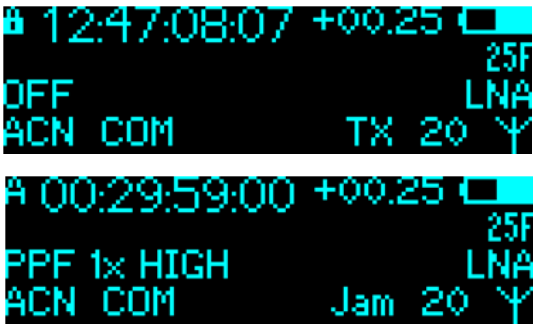
POWER ON / OFF

To turn on the ACN-TL, press and hold the config switch for 4 seconds.

To turn off, press and hold the switch for 4 seconds. The display will show:

Press switch again to power down, toggle left to cancel.

MAIN DISPLAY



The main display is the normal operation mode. It displays the most important status information. These are the time code momentarily running, sync signal type and rate, time code frame rate, and various additional information:

"X" next to the Fps indication indicates a cross-jam mode, i.e. the time code rate is not consistent with the sync rate, but compatible and in sync at each second's transition.

"A" in upper left corner indicates the jam mode "auto", the lock symbol indicates "off" – no external jamming available, "M" indicates manual / once.

"+00:00" top right beside the battery indicates the offset.

"COM" or "MTC" show the status of the USB port.

Information related to ACN will be displayed once it is activated (on above screen shot it is in "TX external time code" mode, channel 20, external antenna and LNA activated).

If the display is switched off (power save), pushing the config switch once will turn it on again without doing any changes. Also, a time code jam activates the display.

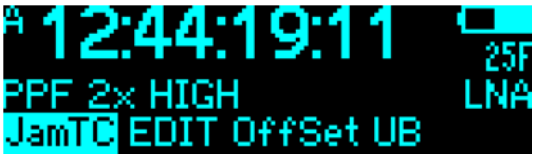
MAIN MENU

Pushing the config switch once enters the main menu screen. The main operation parameters are further displayed. In this screen, you can select the different settings by pushing the config switch. Navigate by toggling the config switch left or right.

Pushing the config switch when EXIT is highlighted exits to the main screen.

If no action is done, the unit will return to the main screen as well.

GEN MENU



In the GENenrator menu, you can edit the jam mode, edit the time and set an offset of the time code output against the jammed time.

Under UB, you can display and manage user bits.

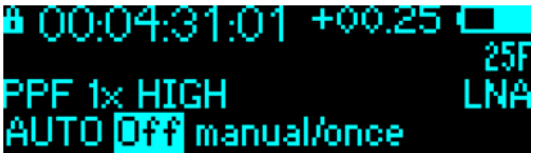
GEN > JamTC

In the JamTC settings, you can select from different jam behaviors:Navigate toggling left/right, push to select.

"AUTO" – the ACN-TL will behave as used to from the former Lockit boxes. It will jam once time code is detected, but not re-jam while time code is continuously present. As long as time code is present, the "A" mark changes to 🔒 indicating that the unit is not ready to re-jam. If the time code is disconnected for 3 or more seconds, the "A" reappears to indicate that the unit will jam again once time code is received.

"OFF" – the ACN-TL does not jam to external time code. This setting is useful if you set the unit manually and not to be jammed by incoming time code.

The 🔒 in top left corner shows that the input is locked.



"manual/once" – the ACN-TL jams once to external time code, but then will not jam again but lock the jam port. Once jammed, the "M" indicator changes to 🔒 signaling that the unit can not be jammed from outside. This setting is useful if you want the unit to be jammed from external time code but then not to be changed by incoming signal anymore. This mode is recommended should a Lockit box be used to re-jam cameras in intervals using a bi-directional time code cable. Some cameras, like the ARRI

Alexa, put out time code permanently even in “ext. TC” mode, which leads to resetting the ACN-TL if in “AUTO” mode.

To reactivate the jam port, just push the config switch repeatedly going >GEN>JamTC>manual/once> and exit. The “M” indicator appears again, the unit is ready to be jammed once again.

CAUTION! Resetting the generator will restart the signal, doing this while recording can result in a corrupted file.

GEN>EDIT

In this screen, you can edit a time code value manually. Decrease or increase by toggling left/right. Holding left/right is fast backward/ forward. Push to select and jump to next.

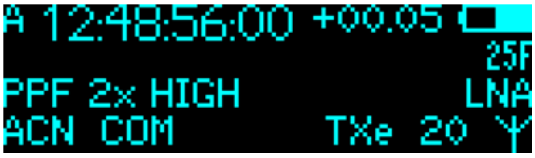
Pushing the config switch while on the frames position sets the time. To avoid inadvertently changing the time code, you will be asked:

Pushing the config switch while “old” is highlighted discards the changes and returns to the main menu.

Pushing the config switch while “new” is highlighted will set the generator to the selected value.

CAUTION! Resetting the generator will restart the signal, doing this while recording can result in a corrupted file.

GEN>OFFSET

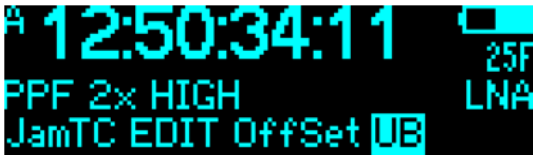


An offset can be entered between the jammed time code and the time code on the output of the ACN-TL. Use this to compensate the processing delay that some file base cameras produce.

If offset is enabled, it will be displayed in the main screen. This shifts only the time code, the sync signal stays locked to the frame start of the jammed time code running in background.

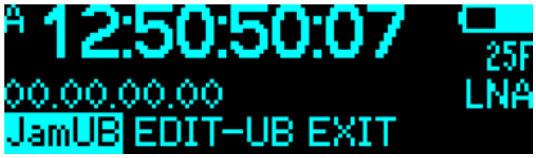
The offset has a range of +/- 10 frames in 0.05 frames steps (equals 2 ms at 25 fps).

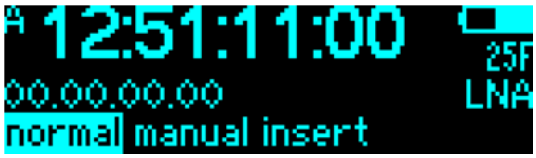
GEN > UB



In the GEN > user bit menu, the user bits are being displayed. The user bits can be edited manually, and the jam behavior managed.

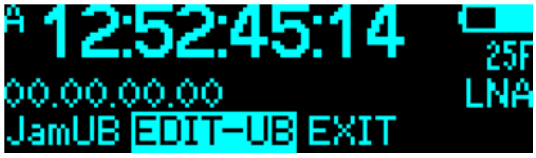
JamUB

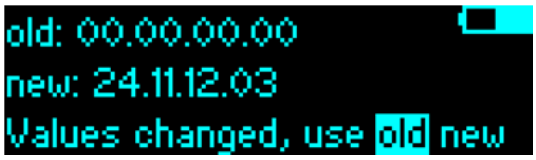




Under JamUB, the jamming behavior is managed:
normal: the user bits are being taken from external time code
manual: the user bits are not being overwritten by external time code. This mode is to be used if you want a custom entry, like date and camera Id for instance.
insert: user bits can be inserted "on the fly". Note: if the source time code was unplugged for more than 3 seconds and reconnected, the ACN-TL will re-jam. For just inserting changed user bits after interrupted time code, you must also set the ACN-TL to "jam once" or "off" in the jamTC menu.
If changed user bits from the master shall be taken over in C-JAM mode, "insert mode" must be selected.

Edit-UB





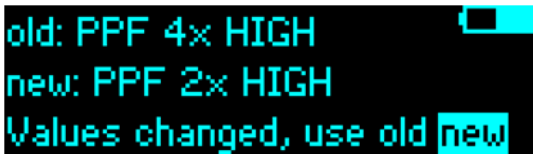
In Edit-UB, the user bits can be edited manually.

Decrease or increase by toggling left/right. Holding left/right is fast backward/ forward. Push to select value, curser jumps to next digit.
After finishing, selecting the new value needs to be confirmed – "use new", or the menu can be left by cancelling – "use old".

EXIT

As the user bits are only displayed in this menu, we added a way to exit without any changes quickly.

SYNC MENU



The SYNC menu lets you set the sync signal format, type and rate. Select the different settings by pushing the config switch. Navigate by toggling the config switch left or right.

"PPF" – selects a "pulse per frame" signal. This is used to trigger certain video cameras.

The PPF signal is put out on pin 3 of the Lemo/TC socket and on pin 3 of the Lemo/ACN socket. Only the output on the Lemo/ACN socket Is a "timer" output, on Lemo/TC there is a jitter of up to 2 ms.

For the PPF signal, rate (single, double, quad) can be selected, and whether it shall be a "high-low" or low-high transition.

Pushing the config switch selects. If any changes have been selected, you will be asked to confirm.

Pushing the config switch while "old" is highlighted discards the changes and returns to the main menu.

Pushing the config switch while "new" is highlighted will set the sync signal to the selected format.

"OFF" – deactivates any sync signal. Use this if time code only is required.

TC MENU

Enter the TC menu to adjust the time code frame rate, MIDI time code (MTC) functions and time code output level for pin 5 Lemo/TC.

TC > FPS

Select FPS for adjusting the frame rate. Adjust by toggling the config switch left/right, push to select new frame rate:
Available rates: **23.976, 24, 25, 29.97, 30, 29.97D, 30D fps (D = drop frame)**
If settings are changed, confirmation is required: Pushing the config switch while "old" is highlighted, discards the changes and returns to the main menu. Pushing the config switch while "new" is highlighted will set the time code signal to the selected rate and resets the time code if changing between integer and non-integer rates (a.k.a. PAL / NTSC Area),

TC > MTC

Select MTC to control the Midi Time Code options:
MTCout: this is the default mode. The ACN-TL always puts out MTC, unless the USB port is set to COM (see SYS > Config > Lemo/ACN > USB)
The Lemo/ACN Socket switches to USB whenever a 5 Volt USB power is recognized.

MIDI>LTC: MTC received through USB on Lemo/ACN will be converted into LTC and put out on both Lemo sockets, pin 5.

LTC>MIDI: LTC received on Lemo/TC pin 2 will be converted and put out as MTC via USB.

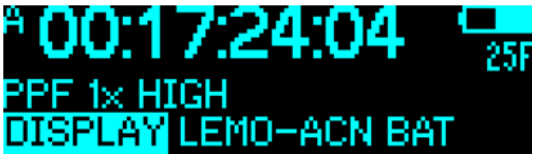
TC > Level

Select Level to adjust output level on Lemo/TC. The adjustable range is from -45 dB to 0 dB. Default level is 0 dB. This equals 3 Vpp without load or 1,5 Vpp or 0 dBu into 1 K Ohm.
Select by toggling left / right, select by pushing in the config switch.

SYS MENU

The SYS menu serves to configure various parameters, The display behavior, USB Lemo/ACN port mode (USB: COM or MTC) and battery type are set. Push the config switch to enter.

SYS>CONFIG



Enter the configuration by pushing in the config switch

Navigate to DISPLAY, Lemo/ACN or BAT, push the

config switch to select.

SYS>CONFIG>DISPLAY

Adjust display brightness from 1 to 10 toggling the config switch left/right. Push in to select value.
The curser will jump to the Auto-off settings:
Select after what time the display shuts off after entering the main operation display.
Choices are:
Never – 5 seconds – 30 seconds – 1 minute – 5 minutes.
Select by toggling the config switch left/right. Push in to select value.

SYS>CONFIG>Lemo/ACN

Select the function of the USB connection:
MTC: this is the default, will be recognized as generic MIDI interface and deliver or receive time code as MIDI time code.
COM: select to communicate with computer, for updating software or transferring ACN data. This mode will appear as a HID in the control panel.
Select by toggling the config switch left/right. Push in to select mode.

SYS > CONFIG>BAT

Select battery type for correct voltage readout and low battery warning / flashing.

Li = Lithium-Ion (non-rechargeable batteries!) 1,5V, Alk = alkaline batteries 1,5V, NiMH = Nickel-Metal-Hydrid rechargeable batteries 1.2 V

SYS > INFO

Select INFO to display information about the ACN-TL:

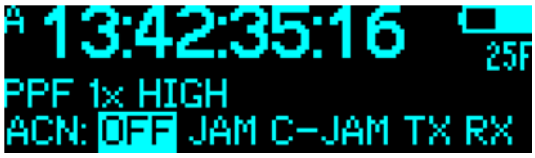
Serial Number
Main firmware version

Mac address

SYS > Factory Reset

This restores factory defaults: Sync is off, TC is 25 fps, ACN is off, display brightness at 3, display auto-off 30 sec., TC-offset reset, USB to MTC.
Time code is not lost, battery type not changed, tune value unaltered.

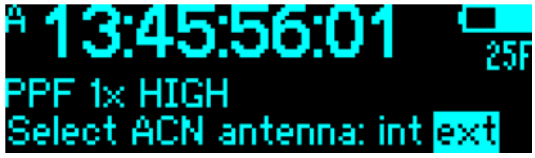
ACN MENU



The ACN menu accesses the **A**mbient **C**lockit **N**etwork configuration.
To enable ACN, select the MODE
In the release version of the ACN-TL, three different network communication modes are available:
JAM,C-JAM, TX / RX

OFF: no wireless functions enabled.

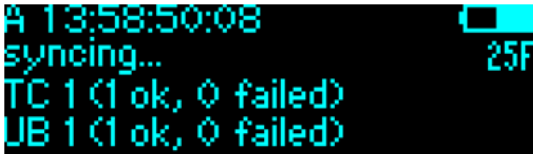
ACN > JAM

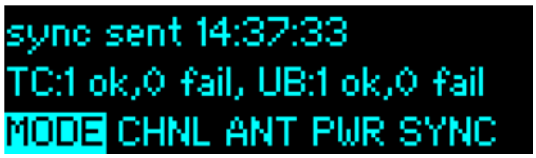


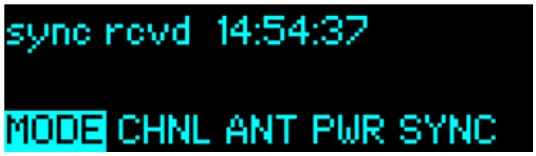
The JAM mode allows to send a sync command to other ACN-TL or ACL 204 devices or receive sync command from them. This serves to remotely sync all units on the set. First, the menu asks to select the wireless channel.
The CHNL setting allows you to select between 16 network channels within the 2.4 GHz range.

The channel can be changed later.
After setting this, selection of internal or external antenna is possible and powering the low noise amplifier LNA for the receiver on or off. The LNA draws power, so it is recommended only should the reception of data be insufficient without. Default setting is internal antenna, for activating the external antenna a PIN code is required.
If the external antenna is activated, the antenna symbol on the bottom right of the display is shown, LNA is shown as well

PWR lets you increase the output power of the transmitter. Default is 8 dBm, up to 18 dBm is possible. Again, the PIN is required.







Selecting SYNC opens the screen for sending a sync command to all ACN-TL or ACL 204 in reach which are on the same channel and in JAM mode. Default is on no, toggle to yes and push to enter.
After sending out the sync command including time code and user bit, the other units reply and the number of units which replied and were successfully synced is displayed.
A device that received a sync command will memorize when the sync command was received. The transmitting device also memorizes the event. The information is displayed when ACN is selected from the main menu.

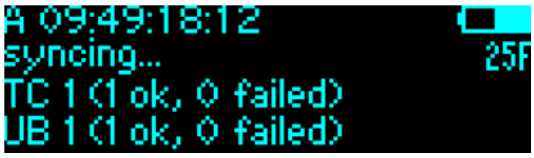
There may be various reasons for a “sync failed” returned:
For time code:

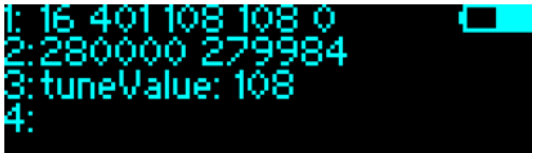
- If the frame rates of sending and receiving device do not match (integer vs. non-integer frame rates like 25 fps and 29.97 fps, the sync command is rejected.
- If “OFF” is selected in the GEN>JamTC settings.
- If “manual/once” is selected in the GEN>JamTC settings and the device has already been jammed before.

For user bits:

- if the GEN>UB>JamUB is set to “manual”

ACN > C- JAM

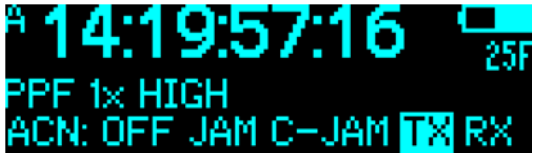




C-JAM is a continuous jam mode. Set up channel, antenna, RF power and LNA as above in JAM mode. When done, select SYNC. In the next display, the continuous jam is initiated. The device used for sending the continuous jam command is master. After sending the continuous jam command, the jam success or fail of other devices ACL 204 or ACN-TL is displayed.
Condition for fail is as in JAM mode, see above.
Any ACL 204 or ACN-TL in range that has not been synced or has an offset bigger than 0.5 seconds will be jammed. After the initial c-jam, the master sends a sync command every five seconds. Slave units display "sync rcvd" and their LED goes to solid green for a second. If synching fails, the LED goes red and "sync failed" will be displayed.
The slave Lockits now compare their own time with the regularly received time stamps and will adjust their tune value to stay closely in sync with the master, the system latency is down to half a video line (SD) if all Lockits are well in tune to each other initially. The latency in µs, measured time in seconds since start of c-jam, current tune value, proposed tune value are displayed in an "expert view" window, accessed by selecting SYS>INFO and then pushing the toggle switch to right (line 1). Line 2 is debug info, line 3 used tune value.

In this mode, a unit that was slave and has been power cycled (for instance for changing batteries) will automatically re-sync when booted. The master unit will be in c-jam mode, but not send sync signals after reboot. Should it become necessary to reboot the master, a former slave may be used to initiate the c-jam and become master. This way, the set time code is maintained. It is recommended though to stay with one master and to re-sync the set after power cycling, this way it can be avoided to have more than one master on location which may lead to unpredictable errors.

ACN > TX / RX



TX (formerly TCext) is a wireless transmission of external time code present on the Lemo/TC input. This is intended for transmitting a record-run time code to another ACN-TL or ACL 204 which is in RX mode (formerly TXRX). Once progressing time code is detected, the ACN-TL jams to it and sends a jam command to the slaves.
When external time code stops, a stop command is sent to the slaves.
If static time code value is recognized, as put out by a video camera or Sound Devices recorder, the time code is stopped and a static time code is put out on the time code output of the slaves as well as on the output of the unit that is in TX.
Please note that in TX / RX record run time code mode no sync signal will be generated

This feature makes it possible to remotely start and stop recording of audio recorders, cameras and video recorders which support being triggered by time code.

As in JAM mode, the network channel needs to be set first when coming from OFF condition but can be changed any time. Other available settings are selection of internal or external antenna, activating LNA and setting the output power of the wireless module. PIN is required for external antenna use and higher output levels.

EXIT

Exits to the main operation screen.

8. LED Indications

As used to from former devices of the Cockit Time Code family, the ACN-TL has a red and a green flashing LED to display operation and battery status:

0 1 2 3 4 seconds:

● ● ● ● ● red flashing in 1 second intervals: running, but not jammed or set.

● ● ● ● ● green flashing in 1 second intervals: running, jammed or set manually. **This is the normal operation mode.**

● ●● ●● red double flash every 2seconds: battery low, not jammed or set.

● ●● ●● green double flash every 2seconds: battery low, jammed or set.

● ●● ●● ●● ●● red double flash every second: TC / video not sync, not jammed or set.

● ●● ●● ●● ●● green double flash every second: TC / video not sync, jammed or set.

The double flash on every second is shown while invalid combinations are configured or while syncing the genlock signal to time code after configuration changes or jamming.

● ●●● ● ●●● combination of not sync and low battery, not set or jammed.

● ●●● ● ●●● combination of not sync and low battery, set or jammed.

● ● ● ● ● ● ● ● ● ● alternating colors during firmware update.

9. Firmware Update

New features, improvement and fixes for the ACN-TL will be available for download from our website:

http://www.ambient.de/en/products/ambient-recording/clockit-timecode/tiny-lockit.html

The firmware update comes as a zipped package including the QT programming interface and the firmware file, and is also available as a Mac DMG

Windows®: Unzip the programming files. Connect the ACN-TL to a computer running a Microsoft Windows® operating system using a USB-A cable to Lemo series 0B 5-pin connector and run the updater. Press the “UPDATE” button. Wait until the message “update successful” appears.

Apple®: mount the DMG and run the updater. Press “UPDATE” and wait until the programming is finished.

The adapter cable from USB-A to Lemo 5-pin is available from Ambient recording.
Item code **ACN-USB**
Contact us for bug reports and suggestions through our contact form.

10. Physical specifications

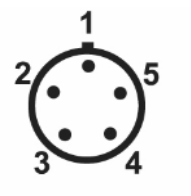
Dimensions: (L / W / H): 71.5 x 56 x 20 mm

Weight: 0.118 Kg (no batteries)

Power consumption: 70 mA (3 Volts, typical)

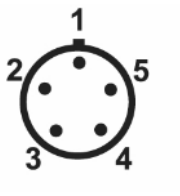
Connectors:

"Lemo/TC": Lemo series 0B 5-pin (matching connector FGG/JGG.0B.305.CLADxx)



pin 1: ground
pin 2: LTC IN
pin 3: ASCII IN / OUT
pin 4: Tune reference 1.92 MHz out / DC-IN 6 to 18 Volts
pin 5: LTC OUT (adjustable output level)

"Lemo/ACN": Lemo series 0B 5-pin (matching connector FGG/JGG.0B.305.CLADxx)



pin 1: ground
pin 2: LTC IN /USB 5V Input
pin 3: ACN: USB D+ / RS232 TX / Event Switch to Pin 4 / GPO (General Purpose Output TTL)
pin 4: ACN: USB D- / RS232 RX / Event Switch to Pin 3 / GPI (General Purpose Input TTL)
pin 5: LTC OUT / 3.3 Volts DC OUT

Lemo/ACN remarks:

- GPO is a timer-driven output with TTL output signal (47 Ohm series resistor)
- GPI is a timer-driven input and even a timer-driven output with an open-drain transistor. It has configurable pull-up (30k) and pull-down (20k) resistors.
- The event switch has a 200 mA fuse between pin 3 and 4

Antenna: SMA-F

11. Warranty & Approvals

Warranty

Ambient Recording GmbH warrants the TinyLockit ACN-TL synchronizer against defects in materials and workmanship for a period of ONE (1) year from date of original retail purchase. This is a non-transferable warranty that extends only to the original purchaser. Ambient Recording GmbH will repair or replace the product at its discretion at no charge. Warranty claims due to severe service conditions will be addressed on an individual basis. THE WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE. AMBIENT RECORDING GMBH DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. AMBIENT RECORDING GMBH IS NOT RESPONSIBLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING FROM ANY BREACH OF WARRANTY OR UNDER ANY OTHER LEGAL THEORY. Because some jurisdictions do not permit the exclusion or limitations set forth above, they may not apply in all cases.

For all service, including warranty repair, please send the ACN-TL, along with proof of purchase date to your retailer, or, if not applicable, to:

Ambient Recording GmbH
Schleissheimer Str. 181 C
DE – 80797 Muenchen, Germany

Please obtain a return authorization through the contact form on our website before sending in a unit.

CE Conformity Statement:

Declaration of Conformity
According to ISO/IEC Guide 22
Manufacturer's Name: Ambient Recording GmbH
Manufacturer's Address: Schleissheimer Str. 181 C, DE – 80797 Muenchen, Germany

declares that the product: ACN-TL Synchronizer
is in conformity with:
- EN 60950-1:2006 + A11:2009+A1:2010+A12:2011+AC:2011
- EN 300 440-1 V1.6.1
- EN 300 440-2 V1.4.1
- EN 301 489-1 V1.9.2
- EN 301 489-3 V1.4.1

which is indicated and affirmed by the applied CE marking.

FCC Statement

The FCC requires that the following statements be included in this manual for ACN-TL:

FCC § 15.19
This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Canada CNR-Gen Section 7.1.3
This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:(1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
FCC § 15.21
Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
FCC § 15.105
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or
television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

ICES-003
This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Tested by: TÜV SÜD Product Service, DE 94315 Straubing

March 2013

Updated April 2014

Sebastian Fell

Ambient Recording GmbH

12.Recommended accessories

ACM-TL Mounting accessory for attaching the device to a 3/8” thread

ACM-FS Adapter 3/8” to cold shoe

ACN-USB Adapter cable USB-A to Lemo Series 0B 5-pin

LTC-IN Adapter cable BNC to Lemo Series 0B 5-pin

LTC-OUT Adapter cable Lemo Series 0B 5-pin to BNC

LTC-OUT/ Epic Adapter cable Lemo 5-pin to Lemo series 00 4-pin for use with RED Epic / Scarlet

TC-I/O Adapter cable Lemo 5-pin to Lemo 5-pin for use with ARRI Alexa

ANT-2.4-SMA-M Antenna straight

ANT-2.4-SMA-M90 Antenna right angle

ACNTL-T Pouch for the ACN-TL

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