



Timecode Systems

GENERATE. SYNC. SHARE



An ultra compact timecode, genlock and word clock generator with transceiver

For the latest manual please visit:

www.timecodesystems.com/support/product-manuals

minitrax+

quick start guide



B:LINK ENABLED

Here we give you a quick tour of your new **Timecode Systems** **minitrx+**, guiding you through its key features so you can get up and running straight away.

What's covered?

The basics to getting started with:

- **Timecode Systems:** **minitrx+**
- **B:LINK Network:** overview
- **Timecode Buddy:** **app** (free to download)

The future of timecode starts here...

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The 'Timecode Systems: app' logo is a registered trademark.

This is a guided tour of your highly accurate timecode, genlock and Wordclock generator and multi-channel digital timecode transceiver with B:LINK slave functionality.

Control

The **Timecode Systems: minitrx+** settings are accessed and controlled from the front panel using the control knob and LCD display.



1. Antenna

For the digital transceiver module operating in 870MHz (CE), 915MHz (FCC/IC) and 920MHz (ARIB) bands.

2. LED

Glowes either blue, green or red.

- Blue flash - TC free running
- Green flash - TC Locked
- Red flash - Warning messages

3. LCD backlit display

Shows the unit's status and settings

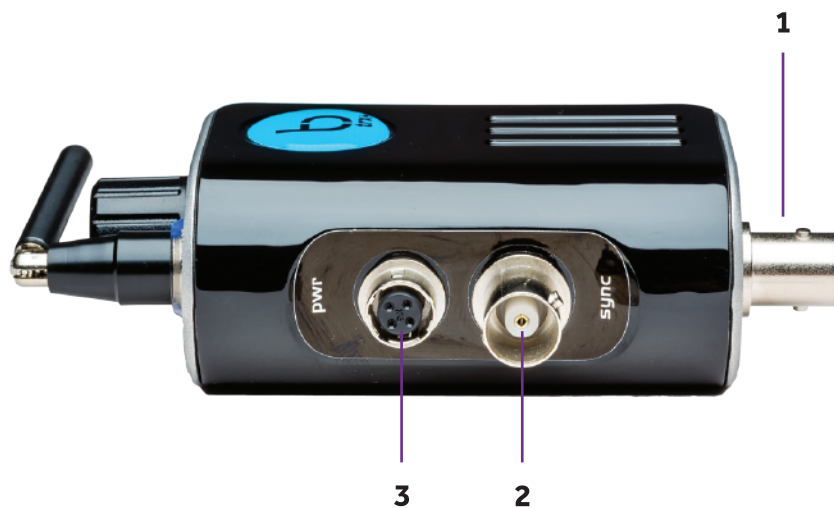
4. Control knob

Allows one finger navigation through menus.

Ports

For all power and sync ports go to the back panel of the device.

1. TC: BNC Socket (LTC IN or OUT)
2. TC/SYNC: BNC Socket (LTC, genlock or word clock)
3. POWER: Hirose HR10a power socket input (9- 24V)
4. Micro USB 2.0 (Power in 5V and firmware updates)



Mounting Solutions

The minitrx+ has flexible mounting options.



included



multiple 1/4 inch thread aluminium mounting block TCB-33



hot shoe adaptor TCB-34



original lightweight mounting hot shoe adaptor TCB-24

optional extras



Timecode Systems 7" articulated mounting arm kit TCB-32



Timecode Systems mini-range leather pouch with Velcro TCB-26

Customise

On-screen menus allow you to easily customise the settings of the **Timecode Systems: minitrx+** to meet the exact needs of your shoot.

The default display shows (on time-out also):

TC + B:LINK unit 'friendly' Name (if assigned my app) + MODE +
RF CHANNEL + SIGNAL STRENGTH

Turning the knob on the front panel clockwise takes you to the following information screens:

1. User Bits
2. Sync O/P Type
3. Button Lock
4. Power Source and Internal Battery Status
5. Firmware Version and Serial Number
6. Jam BNC Timecode (if in INT mode)
7. Jam RF Timecode (if in INT mode)

Button basics

From an information screen, press the knob to go directly to the menu for the corresponding feature. From the default display, press the knob to enter the menu for:

1. Timecode Mode
2. Int Generator
3. RF Settings
5. System Settings
6. Exit

More on menus

Each menu allows further customisation of your **Timecode Systems:**
minitrax+.

Timecode Mode. Choose from four settings:

- **Int Gen.** From here you can set your own TC, user bits and FPS settings, as the 'master clock' on set.
- **Ext RF (cont).** Constantly jam syncs the internal generator from the received TC via another TCB device in RF TX mode. If the unit loses signal, the TC output continues using the internal generator until the signal is received again. If the RF timecode signal received is from a B:LINK master device the unit will automatically operate in B:LINK slave mode.
- **Ext LTC.** Constantly jam syncs the internal generator from the received TC via the TC socket. If the External TC source is removed, the TC output will freeze. Use this mode to sync to an external timecode source.
- **Ext LTC (cont).** Constantly jam syncs the internal generator from the received TC via the TC socket. If the External TC source is removed, the TC output continues via internal generator immediately. Use this mode to sync to an external timecode source.

Internal Generator. Choose from:

- **Set TimeCode.** Turn to set flashing digits, press to enter, repeat for each pair.
- **Set User Bits.** Turn to set flashing digits, press to enter, repeat for each pair.
- **Set FPS.** Set to 25, 23.976, 24, 29.97, 29.97DF, 30 or 30DF.

RF Settings. From here select:

- **Channel no.** 1 to 14
- **RX UBits On/Off.** When On the unit will display and output the UserBits received via RF. If Off the unit will display and output its own UserBits set.
- **RF TX On/Off.** When in Int Gen or Ext LTC modes the unit can transmit its SMPTE timecode data via RF to any other TCS product listening on the same channel.

System Settings. Gives you access to:

- **Sync output type.** Set to OFF, PAL, NTSC, 720p, 720px2, 1080i (PSF), 1080p, 1080px2 (x2 double frame rate), LTC, word clock 44.1, 88.2, 48, 96, 192KHz.
Non-standard TC Sync standards and FPS combinations will be automatically rejected.
- **Sync output level.** Set to STANDARD o/p level for genlocking 1 camera and HIGH o/p level for 2 cameras.
via BNC splitter. Set to HIGH for LTC and Word Clock
- **Set LTC output level.** Set to LINE Level (normal), LOW level and MIC level.
- **Set country/area.** Set to Europe/UK, USA/CA/AU or Japan.
- **Restore defaults.** To remove any customisation.
- **Display** Adjust brightness from 0-100% and flip upside down for left/right handed use. Backlight Always OFF, Short timed ON, Long timed ON and Always ON.



B:LINK Network Feature

The **B:LINK** network augments the existing wirelessly shared timecode and sync data. The proprietary **B:LINK** RF network keeps the same incredibly accurate wireless sync over the robust sub GHz ISM bands, but adds enhanced two-way multiplexed status/control and metadata.

This allows for complete monitoring and control of all connected “**B:LINK**-enabled” Timecode Systems’ devices and is built to allow for long-range remote control and status of any supported & connected third-party accessories.

A product such as the pulse, wave or Denecke TS-TCB slate can be configured as a BLINK master, and products such as the pulse, wave, trx+ and Denecke TS-TCB slate can be configured as BLINK slave devices.

Your mini trx+ will automatically function as a B:LINK slate device when in RF/C mode and receiving a timecode signal from a B:LINK master unit (needs to be set to the same RF channel and country).



B:LINK ENABLED



More on B:LINK

The BLINK slave devices are continually feeding back their status and settings to the BLINK master unit. The BLINK master unit then allows apps such as MovieSlate 8 and the Timecode Buddy: app; to not only display all of this information, but allow the user to remote control certain features. Additionally with the wave and pulse products, if any supported 3rd party equipment is connected the Data port or Ethernet port (pulse), then this equipment can also be remotely controlled.

Of course, all of this BLINK functionality is multiplexed with the original Timecode and Sync information data packets. This ensures that legacy and non- BLINK Timecode Systems' devices are still supported from a BLINK master source.

The huge advantage of the BLINK protocol is that it the Timecode Systems RF transceiver is very long range and robust, with up to 500 metres line of sight range. It is a very uncongested frequency band on set and in heavy RF environments.

This then allows the WiFi network of the BLINK master to be used as a short wireless hop into the apps, with the long range communications being looked after by the BLINK network.

B:LINK ENABLED



:pulse



:wave



slate



minitrax+
(blink slave only)

500M

Timecode Buddy: app

If you own a B:LINK enabled Timecode Systems WiFi product (pulse, wave and Denecke TS-TCB Slate) then you will be able to monitor and control the mini trx+ from the Timecode Buddy: app.

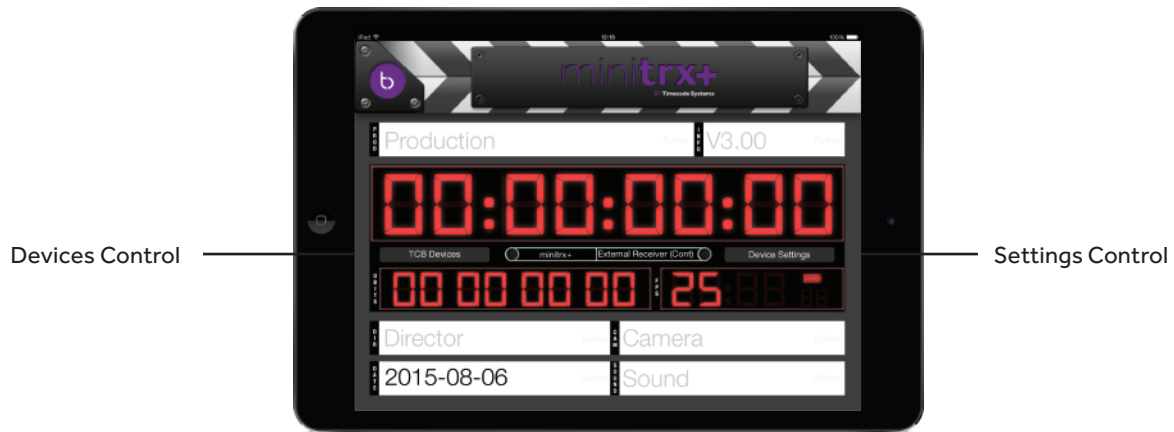
Simply use the WiFi product in a MASTER TX mode, use the mini trx+ in RF/C slave mode. Ensure all devices are on the same RF channel. Once you log your iPad/iPhone onto the WiFi network you will see the mini trx+ device when you press the TCB Devices tab on the app.

If you want to remotely change any of the Device settings via the [app](#), press settings, type in the four-digit passcode (set on the systems menu of your B:LINK master WiFi Device) then make changes directly from the app.



Using the app

Overview. The app allows you to display a frame accurate Timecode Reader of your timecode on-set, via the WiFi network. It also allows some remote settings of the trx+ unit itself when connected BLINK master WiFi unit.



1. **Devices control**

Clicking on TCB Devices shows all **Timecode Systems** units available and allows you to select one to connect to and control.

2. **Settings control**

Clicking on Device Settings causes a passcode prompt to appear. Ensuring that only users with the passcode permission can change the device settings. From this menu you have the option of choosing direct remote control



Detailed specifications

Timecode Systems: [minitrx+](#)

Product features

External dimensions: 29.8mm x 87mm x 110mm

LCD display: two line, 16 character, blue variable brightness backlit display.

Antenna 'halo' lightpipe: tri-colour LED (blue/green/red)

Technical specification

Timecode generator accuracy: 0.12 ppm TCXO reference oscillator . In practice less than 0.2 frame drift in 24 hours, zero drift when RF locked)

Supported FPS Modes: 23.976, 24, 25, 29.97, 30, 29.97DF, 30DF.

Output sync modes: PAL, NTSC, 720p, 720p double frame, 1080i (PSF), 1080p, 1080p double frame, LTC, 44K1 WC, 88K2 WC, 48K WC, 96K WC, 192K WC.

Output sync level: 1V pp / 75 ohm and 1V pp /37.5 ohm for 'High Level/Dual load. Word Clock 2.5V pp on HIGH mode

Timecode Systems: **minitrx+**

Power and timecode sources

- **External power:** 9-24V DC via a 4 pin Hirose connector
- **External power:** 5V micro on-the-go USB connector
- **Internal power:** 3.7v Rechargeable Li Polymer battery
- **T/C input:** BNC connector 0.1 to 5V pp or RF Multi-channel digital transceiver in 865.050-868.550 MHz (CE Approved), 915.050-918.650 MHz (FCC/IC Approved) and 920.600-923.200MHz (ARIB JAPAN Approved)
- **T/C output:** bottom BNC connector (selectable standard/low/mic level) or side BNC connector (standard level only)

Frequencies

Timecode Systems: **minitrx+** RF Frequencies

Our CE approved products are for use in UK/EU and CEPT* countries.

*Albania, Andorra, Austria, Azerbaijan, Belarus, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Moldova, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, The Former Yugoslav Republic of Macedonia (FYROM), Romania, Russian Federation, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, Vatican.

- 1 UK/EU 865.050 MHz
- 2 UK/EU 865.150 MHz
- 3 UK/EU 865.250 MHz
- 4 UK/EU 865.350 MHz
- 5 UK/EU 865.450 MHz
- 6 UK/EU 865.550 MHz
- 7 UK/EU 865.650 MHz
- 8 UK/EU 867.950 MHz
- 9 UK/EU 868.050 MHz
- 10 UK/EU 868.150 MHz
- 11 UK/EU 868.250 MHz
- 12 UK/EU 868.350 MHz
- 13 UK/EU 868.450 MHz
- 14 UK/EU 868.550 MHz

Timecode Systems: minitrx+ RF Frequencies

Our FCC frequencies are for use in the USA, Australia and New Zealand.

- 1 USA/AU/NZ 915.050 MHz
- 2 USA/AU/NZ 915.150 MHz
- 3 USA/AU/NZ 915.250 MHz
- 4 USA/AU/NZ 915.350 MHz
- 5 USA/AU/NZ 915.450 MHz
- 6 USA/AU/NZ 915.550 MHz
- 7 USA/AU/NZ 915.650 MHz
- 8 USA/AU/NZ 918.050 MHz
- 9 USA/AU/NZ 918.150 MHz
- 10 USA/AU/NZ 918.250 MHz
- 11 USA/AU/NZ 918.350 MHz
- 12 USA/AU/NZ 918.450 MHz
- 13 USA/AU/NZ 918.550 MHz
- 14 USA/AU/NZ 918.650 MHz

Timecode Systems: minitrx+ RF Frequencies

Our ARIB frequencies are for use in Japan.

- 1 JP 920.600 MHz
- 2 JP 920.800 MHz
- 3 JP 921.000 MHz
- 4 JP 921.200 MHz
- 5 JP 921.400 MHz
- 6 JP 921.600 MHz
- 7 JP 921.800 MHz
- 8 JP 922.000 MHz
- 9 JP 922.200 MHz
- 10 JP 922.400 MHz
- 11 JP 922.600 MHz
- 12 JP 922.800 MHz
- 13 JP 923.000 MHz
- 14 JP 923.200 MHz

Quality declarations

FCC Warning Statement:

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.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Industry Canada Statements

This product has been approved by Industry Canada & FCC to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Name: Taoglas TG.09.0113, 2.0dBi, 50 ohm

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.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

CE Conformity Statement:

Declaration of Conformity

According to ISO/IEC Guide 22, 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

Warranty and technical support

All products sold by **Timecode Systems limited** are warranted to the original purchaser against defects in materials and workmanship for (1) year from the date of original purchase.

However, this warranty excludes accessories, batteries and cables. Also, this warranty does not apply to any instrument determined by **Timecode Systems Limited** to have been subjected to customer alteration, modification, negligence or misuse.

In the event of any defects determined by **Timecode Systems Limited** to be covered by this warranty, **Timecode Systems Limited** will, at its sole option, repair or replace the defective instrument without charge. To obtain warranty service the defective instrument must be returned within one (1) year from purchase to:

Timecode Systems Limited
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Moseley Road
Hallow, Worcester
WR2 6NJ, UK
Telephone +44 (0) 1700 808600

All transportation and shipping costs are the responsibility of the purchaser.






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