Timecode Systems

GENERATE. SYNC. SHARE

mini basestation

For the latest manual please visit:
www.timecodesystems.com/support/product-manuals

:pulse

BLINK ENABLED

quick start guide

Timecode Systems
GENERATE. SYNC. SHARE

Here we give you a quick tour of your new **Timecode Systems** :pulse, 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:** :pulse
- Overview of the **BLINK network** protocol
- The **Timecode Systems BLINK Hub** app (free to download)

Your Timecode revolution starts here...

:pulse

This is a guided tour of the :pulse. Your highly accurate timecode, word clock & genlock generator and multi-channel digital timecode transciever. Also with simultaneous Wi-Fi or Ethernet.

Control

The **Timecode Systems: :pulse** settings are accessed and controlled from the top panel. This handy position gives you full and easy control of the unit even when it's in a sound mixer bag or sound cart.

4 Control Knob
3 OLED Display

5 Mounting threads

2 LED
1 Antenna

1.Antenna

For the digital transceiver module operating in 868MHz to 923MHz ISM bands.

2. LED

Glows either blue, green or red.
- Blue flash - Wi-Fi ON
- Green flash- Wi-Fi OFF
- Red flash - Warning messages

3.OLED display

Shows the unit's status and settings.

4.Control knob

Allows one finger navigation through menus.

5.Mounting threads

Choose from 3/8" UNC or 1/4" UNC mounting options.

Ports

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

1. 9-36V DC: LEMO2 socket. Power input.

2. DATA: LEMO9 socket. For connectivity to third party equipment.

3. TC: LEMO5 socket. TC IN and TC OUT.

4. TC/SYNC:BNC Socket (select menu for either LTC OUT, Word Clock OUT or TV SYNC OUT)

5. Micro USB 2.0 Socket,5V power IN. Firmware Updates via the Timecode Systems PC and Mac USB Updater Applications.

6. Two port Ethernet Hub. When connected to an ARRI Alexa camera (via TCB-28 lead) it provides an Ethernet to Wi-Fi bridge enabling remote control and metadata logging in conjunction with the MovieSlate 8 app CAMERA CONTROL page. The :pulse is powered (POE) via this lead too. Alternatively allows an Ethernet connection into a laptop PC or MacBook to run the BLINK Hub PC or MacOS apps with a solid Ethernet connection instead of a Wi-Fi connection.

Please visit www.timecodesystems.com/support/firmware for instructions on how to update the firmware of your :pulse product.
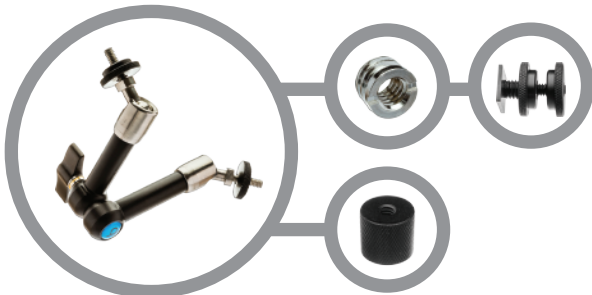
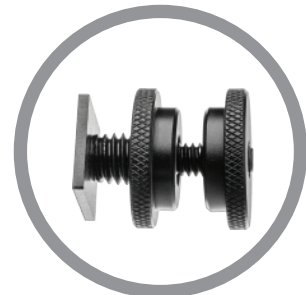# Mounting Solutions

The :pulse has flexible
mounting options.

optional extras

Timecode Systems
7" articulated mounting arm
kit TCB-32

hot shoe adaptor TCB-34

Customise

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

The default display shows (on time-out also):
TC + Unit Name (if assigned by app) + MODE + RF CHANNEL+ SIGNAL STRENGTH+BATTERY STATUS

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

1. TC, Unit Name, Mode, RF Channel, Signal strength, Battery status
2. TC, User Bits, FPS
3. BNC Sync 0/P Mode and Level
4. Button Lock
5. Power Status and Battery Status
6. WI-FI Network Mode, Status, IP Address, SSID name
7. Ethernet Status, Fixed IP Address
8. Product name, FW version, Serial number

Button basics

Press the knob to enter the menu for:

1.   TC Generator
2. SYNC Generator
3. Set RF Channel number (if in an RF mode)
4. Wi-Fi Settings
5. Ethernet Settings
6. Display Settings
7. System Settings
8. Timecode Mode

More on menus

Each menu allows further customisation of your **Timecode Systems** :pulse

Timecode Mode. Choose from five settings:

- **Free Run/Jam-Ext.** This is a straightforward mode for a standard 'set and forget' sync box. No RF Timecode modes, just set the internal generator or jam T/C from an External source. The unit will 'Free-Run'.
- **Int-Gen TX.** This is a mode where the unit is the 'master clock', transmitting T/C to all receiving 'slave' devices. The unit acts as a BLINK master device, collecting all status and metadata from listening BLINK slave devices.
- **Ext-TC TX.** This is a mode where the unit takes its T/C from an External source (via LEMOS connector), then transmits this T/C to all receiving 'slave' devices. The unit acts as a BLINK master device, collecting all status and metadata from listening BLINK slave devices. If the External T/C is removed the T/C ouput freezes.
- **Ext-TC/C TX.** This is a mode where the unit takes its T/C from an External source (via LEMOS connector), then transmits this T/C to all receiving 'slave' devices. The unit acts as a BLINK master device. collecting all status and metadata from listening BLINK slave devices. If the External T/C is removed the T/C output continues using the Internal Generator.
- **Ext-RF Slave.** This is a mode where the unit acts as a 'slave' receiving unit, constantly locking to the incoming RF timecode & sync data, soft jamming & chasing the incoming T/C from an RF master unit. This could be Free Run or Rec-Run timecode. The units also acts as a BLINK slave unit, sending its status and settings back to the BLINK master unit. It can also be remotely controlled from the BLINK master unit via the app.

TC Generator. Choose from:

- **Set T/C.** Turn to set flashing digits, press to enter. Repeat for each pair.
- **Set U/B.** Turn to set flashing digits, press to enter. Repeat for each pair.

- **Set FPS.** Set to 23.976, 24, , 25, 29.97, 29.97DF, 30 or 30DF.

SYNC Generator. Choose from:

- **Set BNC O/P Mode.** Choose from either Bi Level, Tri Level, Word Clock and LTC modes from this socket.
- **Set BNC O/P Level.** Choose from NORMAL or HIGH levels.

LTC needs to be set to HIGH. TV Sync can be selected to NORMAL or HIGH (3D Rigs). Word Clock is always set to HIGH.

Set RF Channel Number: Select the RF channel group for Transmit or Receive (depending on the timecode mode selected from the menu).

Wi-Fi Settings. Unlocks Wi-Fi enabled features including wireless streaming of timecode to Timecode Systems BLINK Hub app, Adobe LiveLogger app, MovieSlate 8 logging app, Q Take HD and Softron Movie Recorder. Also unlocks the powerful BLINK network features (see page 7).

- **Turn On/Off.** When ON allows you to restart the Wi-Fi network if needed.
- **Network Type.** Select 'Soft AP' for normal app connection (iOS, Android and MacOS) and viewing of the web interface. Select 'Infrastructure' to connect to an existing known Wi-Fi network to extend Wi-Fi range (select the network to choose via the BLINK Hub app interface)
- **Stealth Mode.** Select this mode as a battery saving feature. If External Power is removed, the :pulse will automatically shutdown the Wi-Fi network. As soon as the External Power is re-applied then the Wi-Fi network is automatically switched back on.
- **Network ID No.** Give your :pulse its own SSID name* (Choose a number from 001 to 099). *Every :pulse on set needs to be given a different SSID to avoid network clashes.

Ethernet Settings. Turn On/Off. When ON enables features including wired Ethernet streaming of timecode onto a wired LAN. Allows connection of the :pulse to the Ethernet port of a PC or MacBook to run the Timecode Systems MacOS or PC BLINK Hub app, QTake HD and Softron Movie Recorder. When connected to an ARRI Alexa camera (via TCB-28 lead) it provides an Ethernet to Wi-Fi bridge enabling remote control and metadata logging in conjunction with the MovieSlate 8 app CAMERA CONTROL page. The :pulse is powered (POE) via this lead too.

Display Settings:

- **Set Brightness.** Allows you to change the level of brightness from 1 through to 100. (100 being the brightest)
- **Power Saver Short.** Stays bright short duration, then dims.
- **Power Saver Long.** Stays bright longer duration, then dims.
- **Screensaver.** The display will switch off after a period & switch on with a button change.
- **Set Aiways ON.** Stays bright at the set Brightness level.

System Settings.

- **Set RF country/area.** Set to Europe/UK, US/CA/AU/NZ or Japan.

- **Restore defaults.** To remove any customisation.

- **Set passcode.** Choose a passcode to allow access to settings changes from Timecode Systens BLINK Hub app or MovieSiate 8 app. Default passcode is 1111.
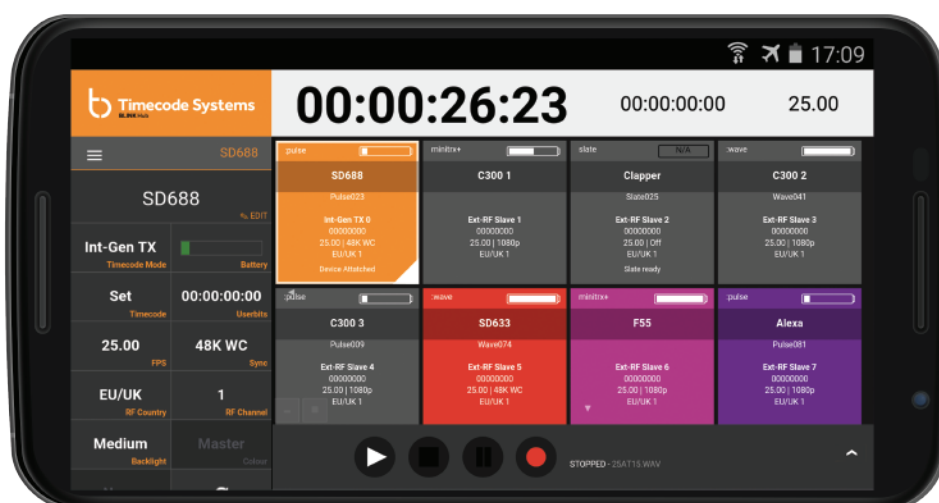
BLINK

BLINK Network Feature

The **BLINK network** augments the existing wirelessly shared timecode and sync data. The proprietary BLINK 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 "BLINK enabled" Timecode Systems' devices and is built to allow for long-range remote control and status monitoring of any supported & connected third-party devices.

The :pulse and :wave can be configured either as a BLINK master or slave, whereas the :minitrx+ and SyncBac PRO can only be configured as BLINK slave devices.

BLINK ENABLED

More on BLINK

The BLINK slave devices are continually feeding back their status and settings to the BLINK master unit. The BLINK master unit then allows the Timecode Systems BLINK Hub app to not only display all of this information, but allow the user to remote control certain features.

Additionally with the :pulse, if any supported 3rd party equipment is connected the Data port, then this equipment can also be remotely controlled using the unit's Wi-Fi or Ethernet interface to our BLINK Hub application running on a smart device, PC or Mac or via the Wi-Fi interface for the MovieSlate 8 iOS app (Sound Dept section)

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

The huge advantage of the BLINK protocol is that 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 Wi-Fi network of the BLINK master to be used as a short wireless hop into the apps or a solid cabled Ethernet connection between the PC or Mac, with the long range communications to slave units being looked after by the **BLINK** network.

500M

BLINK Hub

Timecode Systems BLINK Hub app

Now your Timecode Systems :pulse hardware is up and running,
it's time to download the Timecode Systems **BLINK Hub** app.

- Our iOS app is free to download from the Apple app store
  and the Android app is free to download from the Google Play store

- Our MacOS app is free to download from our website

- Turn on the Wi-Fi of your Timecode Systems :pulse.

- Select the Wi-Fi network of the Timecode Systems :pulse – i.e. Pulse095

- Open the BLINK Hub app. This should now show the running timecode
  from your Timecode Systems :pulse. The BLINK Hub data will be loaded
  from the :pulse into the app.

- If you wish to connect to the :pulse via Ethernet for using the BLINK Hub app,
  ensure that the Wi-Fi is switched OFF and the Ethernet is switched ON.
- The PC or Mac will get an IP address from the :pulse DHCP server.

- Launch the BLINK Hub app and you should see running timecode on the app
  and the BLINK Hub status page will load.

- If you do not need the running timecode you may simply launch BLINK Hub
  control from any web browser, by typing in the fixed Ethernet IP address ~
  (if Ethernet connection) or Wi-Fi IP address (if Wi-Fi connection).

  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 Device) then make changes directly from the app (default
  passcode: 1111). Without entering the password only the status on the
  units can be viewed.
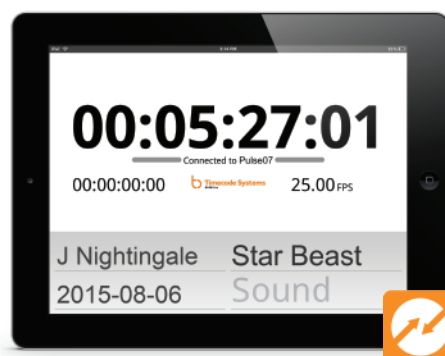
Using the app

Overview. The app allows you to display a frame accurate Timecode Reader of your timecode on set on the iOS or Android app via the Wi-Fi network. It also allows full remote control of settings of the :pulse unit itself and any connected BLINK slave unit.
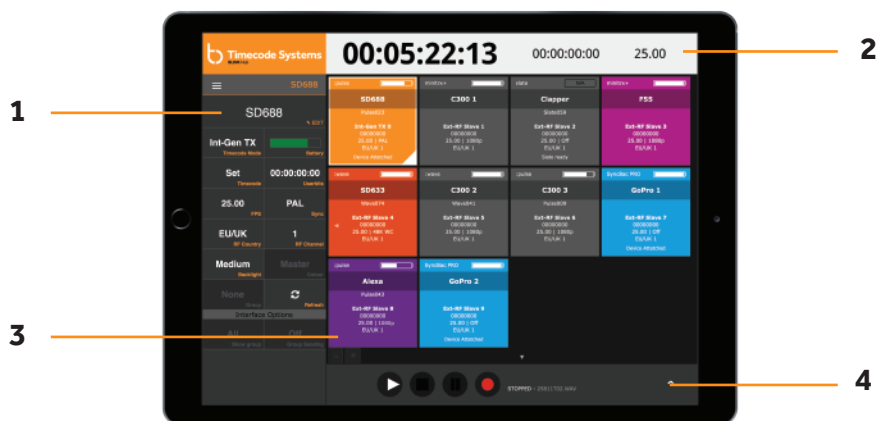
1. **Control Panel**
   This panel allows you to access all of the relevant controls for a selected unit within the BLINK Hub. Change any of the available settings to have it immediatley update your device.

2. **Timecode Reader**
   A frame accurate timecode reader listing your running timecode and both your userbits and framerate. Tap to expand into a full digital slate view.

3. **Status Panel**
   Live status monitoring of any units on your BLINK network, view your master and every other individual slave at a glance. Select a tile to access a device's individual controls.

4. **Transport Control**
   Use our BLINK Protocol to communicate with any supported third party device attatched. Send transport control commands or open up a unique settings window to handle the more advanced options available.

Detailed specifications

Timecode Systems: :pulse

Wi-Fi activated features

Accurate Wi-Fi or Ethernet streaming of SMPTE timecode data to iOS, Android and macOS apps.

Wi-Fi or Ethernet connectivity to allow setting changes to the :pulse unit or any BLINK connected remote slave RF connected unit.

Wi-Fi or Ethernet connectivity to see all settings via any connected web browser.

Infrastructure Wi-Fi connectivity to allow for multiple units to be connected to an external Access Point/Router (needs the BLINK Hub app to scan and join other networks)

Wi-Fi connectivity to allow 2 way communications with supported 3rd party equipment connected to the LEMO 9 DATA PORT.
For example, if a 6 series Sound Devices audio recorder is connected via the TCB-40 Interface cable to the keyboard USB port of the mixer then the 6-series can be fully remote controlled by WiFi on the MovieSlate 8 iOS app and the BLINK Hub iOS, Android and MacOS apps. If the :pulse is connected via Ethernet to a PC or Mac the BLINK Hub can be used to control the 6 series Sound Devices recorder.

Technical specification

External dimensions: 94mm x 67mm x 23mm

OLED Display: Blue 128 x 32 pixels

Timecode generator accuracy: TCXO 0.1ppm when free running, in practice around 0.1-0.2 frames drift in 24 hours. Zero ppm when RF locked to a master.

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

Supported SYNC Outputs : PAL, NTSC, 720p, 720p2 (double frame rate), 1080i-PSF. 1080p, 1080p2, Word Clock standards 44.1, 88.2, 48. 96 and 192KHz

Wi-Fi: 2.4 GHz IEEE std.802.11b/g, SoftAP and Infrastructure modes. DHCP Server, Web server.

Ethernet 2 port switch. DHCP Server.

Timecode Systems: :pulse

Power and timecode sources

- **External power:** 2 pin LEMO (9V to 36V DC).

- **External power**: Micro USB (5V DC).

- **External power:** Ethernet RJ45 POE (power over Ethernet 20-50V DC)

- **Internal power:** Built in Li-Polymer (3.7V battery)

- **T/C input:** LEMO5

- **T/C outputs:** LEMO5, LEM09 and BNC Socket

- **SYNC output:** BNC Socket (TV SYNC, Word Clock or LTC)

- **Multi-channel digitaltransceiver:** 865.050-868.550 MHz (CE Approved) 915.050-918.650 MHz (FCC/ICApproved) and 920.600-923.200MHz (Japan ARIB Approved).

Frequencies

Timecode Systems: :pulse RF Frequencies, FHSS

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.

- UK/EU 865.050 MHz to 868.550 MHz FHSS

Timecode Systems: :pulse RF Frequencies, FHSS

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

- USA/AU/NZ 915.050 MHz to 918.350 MHz FHSS

Timecode Systems: :pulse RF Frequencies, Fixed

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 contains radio transmitter 104271-TCB11 and AYV-TCB11. It 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 150/IEC Guide 22. is in conformity with:
-EN 60950-1:2006 + A11:2009+A1:2010+A12:2011+AC:2011
-EN 300 440-1V1.6.1
-EN 300 440-2 V1.4.1
-EN 301489-1V1.9.2
-EN 301489-3 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 SYSYTEMS LIMITED to have been subjected to customer alteration, modification, negligence or misuse.

In the event of any defects determined 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
ATTN: Repair Department
Unit 6, Elgar Business Centre
Moseley Road, Hallow
Worcester, WR2 6NJ, UK

Telephone +44 (0) 1700 808 600

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

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