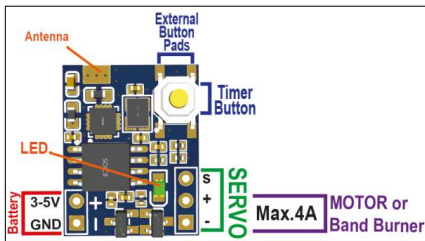
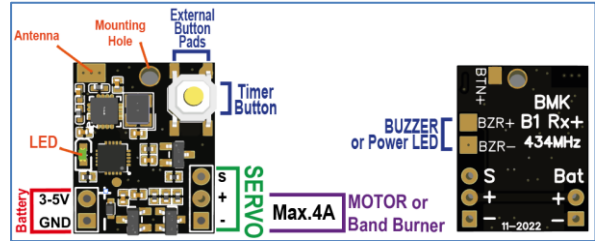


# BMK B1 Receiver

## Single Output Timer with Integral Remote DT



**BMK B1 Rx**



**BMK B1 Rx+**

Remote DT B1 is the ultimate remote dethermalizer/timer for small free flight models. Not only for competition models, but for others that we do not want to lose, but also do not want to put an expensive and heavy DT system on them. It also works as rubber to electric flight conversation system.

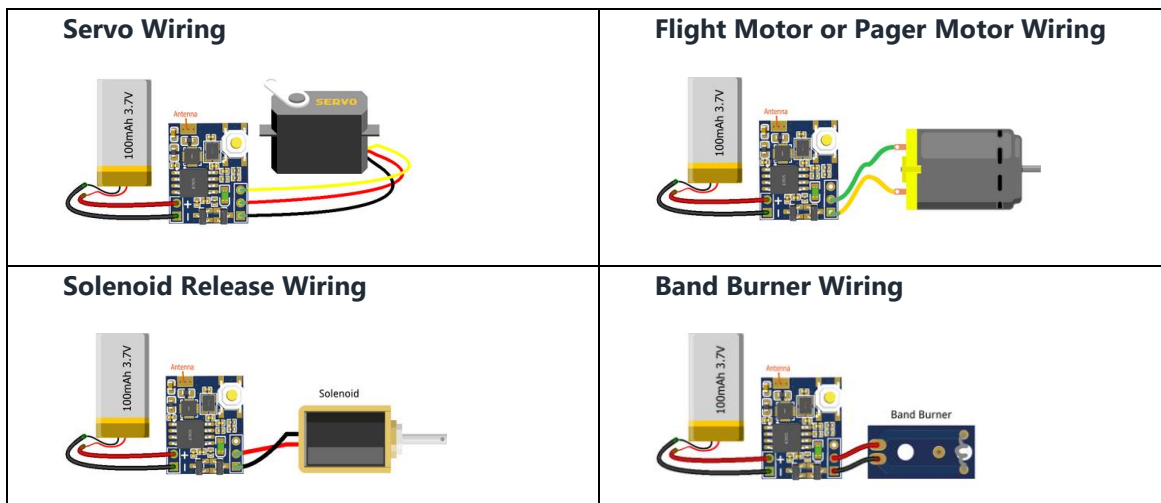
**Please note:**

- \* This timer has been upgraded to the (+) version with a better microcontroller and buzzer/led driver in Summer 2023.
- \*\* Configurable 1 and 10 seconds interval mode also added to the end of the settings sequence.
- \*\*\* The DT Delay(Abad+) function introduced on 18 September 2023 is available for the new timers from this date. You can delay the DT time 30 seconds by using a compatible BMK SkyLink 434Mhz hand unit.

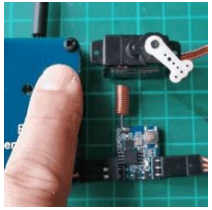







### Features

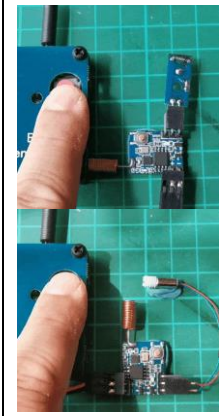
- **Max. Timer Duration** : 255 seconds (1s interval mode) or ~41 minutes (10s interval mode/Rx+ only)
- **Timer Steps** : 1 and 10 seconds configurable (RX+ only)
- **Timer Activation Method** : Hold the onboard button for at least 1.5 seconds, the timer will start when the button is released.
- **Timer Cancel Method** : Click the onboard button
- **Timer Override** : Click the BMK Remote B1 Transmitter Button
- **Working Frequency** : 434 MHz
- **Input Sensitivity** : -116dBm
- **Range** : 2750m (calculated typical open field outdoor range)
- **Input Voltage** : 3-9v
- **Output Voltage** : Same as the Input Voltage. Use compatible servo/motor/etc
- **Max. Output Current** : 5A continuous, 20A pulsed (electric motors must be filtered against back EMF)
- **LED/Buzzer Driver** : You can solder any 3-5v Buzzer or 1-5W power LED to the buzzer terminals as a visible or audible beacon.
- **Power Consumption** : ~10mA @ Receiving
- **Low Battery Warning** : <3.5v (double flashes instead of single)
- **Dimensions** : 20mm x 16mm x 6mm
- **Weight** : 1.6g (Rx+) / 2.7g(Rx)

### Wiring Examples



## Timer D/T Modes

	<p><b>1- Servo Toggle</b> Servo travels from left to right when the timer countdown is completed or the Remote DT button is pressed. It travels back when the button is pressed again and so on. You can cancel the DT operation in mid-air if you are using a pushrod operated DT system. * The Servo Toggle modes may not be suitable for the competitions because you have full control of the servo. Please consider Mode 3 or 4.</p>		<p><b>6- Electric Flight Motor (Timer&gt; OFF, Remote DT&gt; OFF) Competition mode</b> Ideal for E20 model competitions. The motor output will be turned on when the onboard button is released(hand lunch). You can turn it OFF with the remote or the timer will do the job automatically when the countdown is complete.</p>
	<p><b>2- Servo Toggle - TRISTATE</b> Same as Mode.1 but the servo travels between 3 positions(left-centre-right) by the remote.</p>		<p><b>7- Electric Flight Motor (Timer&gt; OFF, Remote DT&gt; ON/OFF) Electric model fun mode</b> Ideal for E20 model fun flights. Same as Mode 6 but the remote can be on and off the motor whenever you like.</p>
	<p><b>3- Servo Cycle</b> Ideal for the competition models. Servo travels from left to right for 2 seconds then returns to the arming position automatically.</p>		<p><b>8- Electric Flight Motor + 2 Seconds Delay + Ramp (Timer&gt; OFF, Remote DT&gt; OFF) Indoor Competition mode</b> Ideal for indoor ROG/ROW (no push or hand-launch). 2 seconds after the onboard button is released, the engine starts smoothly. You can turn it OFF with the remote or the timer will do the job automatically when the countdown is complete.</p>
	<p><b>4- Servo One Way</b> Ideal for the competition models. Servo travels from left to right with no return. The onboard timer button click is required to return the arming position.</p>		<p><b>9- Electric Flight Motor + 2 Seconds Delay + Ramp (Timer&gt; OFF, Remote DT&gt; ON/OFF) Indoor Fun mode</b> Ideal for indoor ROG/ROW (no push or hand-launch). Same as Mode 8 but the Remote DT can be on and off the motor whenever you like.</p>



## 5- DT Motor - Band Burner Mode

Ideal for a lightweight setup. You can use geared micro electric motors, hacked servo, band-burner etc.  
 The output will turn on for 2 seconds with the remote DT or the timer will do the job automatically when the countdown is complete. The remote DT process can be repeatable in case of a failed DT action.  
 Band burner board [here](#)

## Single Page Field Manual

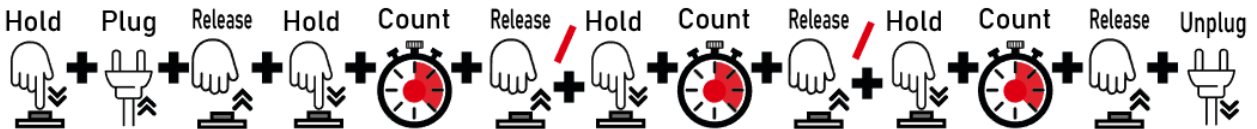
### How to Bind a B1 Receiver with a Transmitter?



1. Press and hold the timer button before plugging the battery.
2. Plug the battery when holding the timer button, then release the button
3. The Receiver LED will flash continuously at 5Hz.
4. Click the Transmitter DT Button.
5. The Receiver LED will turn solid RED for 4 seconds to show the binding process completed successfully.
6. The receiver will reset automatically. Now you can remove the battery or use your timer.

Youtube Video: <https://www.youtube.com/watch?v=HZC7O9ZFdXo>

### How To Set the Timer Mode / Duration / Interval?



1. Press and hold the timer button before plugging the battery. (like the binding process)
2. Plug the battery when holding the timer button, then release the button
3. The Receiver LED will flash continuously at 5Hz.
- **MODE SELECTION**
  4. Press and hold the button and count the LED blinks for the mode number.
  5. Release the button when you reach the desired mode.
  6. The LED will fast flash 3 times when saving the mode setting. Then stops blinking.  
 \* You can continue for the duration setting or remove the battery if you don't want to change the timer duration.
- **DURATION SETTING**
  7. Press and hold the button and count the LED blinks.
  8. Each Blink adds 1 second to the timer. For example, 30 flashes, means 30 seconds. (or 3 flashes if it's in 10s interval mode.)
  9. Release the button when you reach the desired timer duration.
  10. The LED will fast flash 3 times when saving the timer duration. Then stop blinking.  
 \* You can continue for the interval setting or remove the battery if you don't want to change the intervals.
- **INTERVAL MODE SELECTION (Rx+ only)**
  11. Press and hold the button for 1 LED blinks for the 1s intervals or 2 or more for the 10s intervals
  12. Release the button when you reach the desired mode.
  13. Unplug the battery.

### Using Your Timer



# BMK B1 Receiver Datasheet

1. Plug the battery
2. the LED will flash once every 2 seconds.  
*\*The double flash means the battery voltage is below 3.7v and you must recharge the battery.*
3. Press and hold the button for at least 2 seconds to arm the timer before launch. (The LED will turn ON.)
4. Release the button when launching, the motor and the timer countdown will start. During the countdown, the LED will flash fast.
5. When the countdown is complete, the motor will turn off.  
*\*Click the button to cancel If you have accidentally released the button or your model has landed before the countdown is complete.*

## CANCEL or RDT

- Just single click the onboard button to return the disarmed position at any stage.
- Or overwrite the timer with the RDT Tx button for DT action.

## Re-Arming the Servo after a DT event:

- Short click the timer button and the servo will turn to the start position automatically if it's on DT position from the previous flight

## Receiver Firmware Flowchart

*\*Please note: The chart below shows the flow of the original B1 Rx firmware. the Rx+ boards has one more step for the interval mode.*

