

# IMMOZEGEAR

## Operating Steps for the Q28-BNC

### 1. Select the Rate

Select the timecode rate by adjusting the left rotary control on the front of the Q28-BNC. The rate switch positions are: 0 – 23.976 FPS 1 - 24 FPS 2 – 25 FPS 3 – 29.97 FPS 4 – 29.97 FPS DF 5 – 30 FPS 6 – 30 FPS DF

*\*Note: The rate can only be changed when the Q28-BNC is powered OFF. Any attempt to change the rate while powered ON will cause the LED to flash rapidly. This indicates the timecode rate being generated is not the same as that which is displayed on the switch. If the rate switch is adjusted while the Q28-BNC is ON, no change or interruption to the timecode's output will occur. (Important: Do not use positions 8 and 9. Position 7 is for the Show position.)*

### 2. Power ON

To power on the Q28-BNC, slide the black switch on the main front panel towards the center of the Q28-BNC. To power OFF, slide the switch towards the BNC.

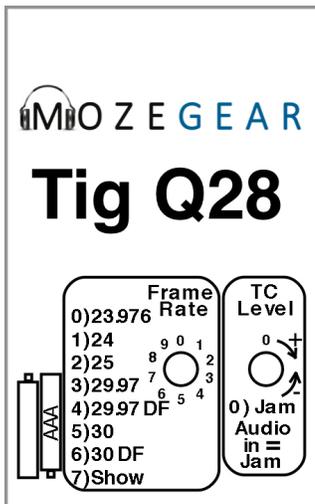
### 3. Jamming

#### To jam you must use the mini connector

The jam signal needs to be on the tip and ground on the sleeve, (ring is not used). Before doing anything else, set the output level desired for the camera and then switch the Q28-BNC off. Now set the output level switch to position 0. When the Q28-BNC is switched on, the output level will be as was previously selected but the audio input (tip) will be the jam input. As soon as the Q28-BNC locks to the jam signal, the audio input will revert back to being a left and right summed audio signal\*. The output level control may be left in position 0 and only moved if a change in output level is required. The Q28-BNC will automatically switch the jam input as required. (When comparing the Q28-BNC to most other TC sync boxes, the equivalent level is around position 12. Generally DSLR cameras and other i devices would typically use a lower level).

*\*Note 1 - As soon as a lock is acquired, the jam signal will be passed as an audio signal and will be very loud in any audio system connected to the Q28-BNC audio output. We recommend that the audio signal is disconnected from the camera while the jam signal is connected.*

*\*Note 2 - If the Q28-BNC is free running and the output level switch is left in position 0, then the Q28-BNC will draw more current than normal and the batteries won't last as long.*



### 4. Jamming and Cross Jamming the Q28-BNC

The Q28-BNC can be jammed to another timecode device by connecting an external timecode source the 3.5mm connector closest to the middle of the device (see 3B above). Timecode can be jammed by doing one of the following: 1.) switch on the Q28-BNC with external timecode connected, 2.) plug in an external device to the Q28-BNC while it is free running, 3.) switch on an external timecode device already connected to the Q28-BNC jam input. When locked to the external timecode, the LED will flash one second on and one second off.

When cross jammed, the LED will flash ON and OFF at a rate of two seconds on, two seconds off, to indicate the Q28-BNC is cross jammed. The input rate can be discovered in the case of cross jamming by rotating the rate switch until the LED shows almost continuously, and blinking off briefly each second to indicate the switch is at the jam input rate. The rate should then be returned to the original position. When rotating the switch, no change will occur in the timecode being output. (*Important note: It is NOT recommended to leave the jam input connected.*)

### 5. Set the Timecode Output Level

The timecode output level is variable between approximately 20mV and 3V peak-to-peak. To change the timecode level, simply adjust the right rotary control on the front of the Q28-BNC. This controls the level to both the BNC and the 3.5mm jack.

### 6. Set Flow Through Audio

The Q28-BNC was designed to generate timecode for DSLR cameras with an audio input or to a recorder that does not have timecode. To aid this use, stereo audio can be connected to the center 3.5mm jack. The audio is then summed and output with timecode to the 3.5mm jack towards the edge. (Summed audio is sent to the right or the ring and timecode is sent to the left or the tip).

### 7. Connect Output Cable

The Q28-BNC is designed to output from the BNC or 3.5mm jack on the top panel. To output timecode only, connect to the BNC or the 3.5mm on the outside edge. To output timecode and audio, connect to the 3.5mm on the outside edge and connect audio to the center 3.5mm jack.. The "outside edge" 3.5mm can also be used as a timecode only output. (*Important note: the Q28-BNC is NOT designed to drive two devices or one device from each output at the same time.*)

## Other Functions

### **Battery Life and Indication.**

The battery life should last for about 15 hours. A low battery level is indicated when the LED flashes twice at short intervals. When the LED light is solid, this indicates the battery voltage is too low and will NOT produce timecode.

### **Show Position**

The timecode is shown by flashes of the LED in hours and minutes. Zero is indicated by a short blip. A timecode of 01:00 would be shown by, "*blip -- pause -- 1 flash -- pause -- blip -- pause -- blip -- long pause.*" 12:03 would be shown as "*1 flash -- pause -- 2 flashes -- pause -- blip -- pause -- 3 flashes -- long pause.*" It is best to watch this a few times to get used to how it works and you will find it very easy to interpret. DO NOT start the Q28-BNC in position 7. No timecode will be output and the LED will show "*blip -- pause -- flash continuously*"

## LED Indications Quick Guide

### **LED flashes one frame at the beginning of each second**

When the Q28-BNC powers ON, it will generate timecode at the selected rate. It will flash one frame at the beginning of each second (frame zero) to indicate that timecode is being produced. A second camera can shoot this LED to get some indication of sync. This can be done even if it does not have any timecode connected. Timecode begins at 01:00:00:00 and all user bits are zero.

### **LED flashes one second ON, one second OFF**

When jamming, the LED on the Q28-BNC will blink at a rate of one second ON, one second OFF to show it is jammed.

### **LED flashes two seconds ON, two seconds OFF**

When cross jamming, the LED on the Q28-BNC will blink at a rate of two seconds ON, two seconds OFF to show it is cross jammed.

### **LED flashes twice at short intervals**

A low battery level is indicated when the LED flashes twice at short intervals. Timecode output is still produced at a correct rate while battery low level indicator is operating. If you are trying to jam while the battery warning is active, the battery warning will cease for approximately one to two minutes when the jam timecode is locked. This is done so that the jam indication can be seen. After this time the battery warning will reappear.

### **LED full ON**

If the LED is fully ON, this indicates that the battery voltage is too low to produce timecode.

### **Short Blip Followed by Flash**

If the Q28-BNC was started in position 7, no timecode is being output.

## Cable Wiring

### **BNC**

Outer - Ground  
Pin - TC Out

### **3.5mm Output**

Tip - Timecode  
Ring - Summed Audio  
Sleeve - Ground

### **3.5mm Audio Input**

Tip - Audio Left (Additional jam input when level control is at position zero)  
Ring - Audio Right  
Sleeve - Ground

## Warranty

The Q28-BNC Q28-BNC has a 2 year limited warranty and is manufactured in the U.S. by MozeGear.

MozeGear  
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