

GR-2 Overview

The GR-2 is a precision stand-alone Timecode Master Clock - generator/reader. It can be used for finding offsets and drift with its internal error display.

When the GR-2 is turned on by pressing the joystick center, it will go into the generate mode at the preset frame rate. The timecode sets to the internal time of day and the user bits are set to the current date. To set the timecode, user bits, and frame rate, press and hold the "SET" (joystick center click) for two seconds. The timecode will stop and a large cursor will appear over the "G". Use the up, down, left, and right joystick positions to set the proper mode and timecode value. The user bits are set in the "UB" screen. Once the rate and mode are set press the "SET" button. The cursor will disappear and the timecode will start. Re-jam all of the external devices after setting the code so you are in sync.

DISPLAY:

The display is a two line 12-digit LCD module that shows timecode/user bits, mode and rate. The following list is a description of the different mode functions.

(G) = The default mode at turn on. Generate timecode at 23.976, 24, 25, 29.97 (drop and non-drop), & 30 (drop and non-drop). When the GR-2 is first turned on, it displays the version number and copyright notice. The turn on sequence takes approximately 2 seconds. The timecode feeds to the output when the display is running. All the buttons are active on the GR-2. Entering set mode will stop the timecode and allow setting of new time and frame rate. This will offset the timecode. Be sure to re-jam any slave devices.

(UB) = User bit information is set in this mode. These values overwrite the date information in the user bits from start up. Valid characters are 0 - 9, A- F. The last two user bit digits are stored in memory.

POWER OFF = Turns the GR-2 off.

(ST) (SD) = Sets the internal clock time (24 Hr), date, and date format (Day\Month, Month\Day). The internal clock is used to set the timecode clock at turn on. An internal backup lithium battery (CR1220) is used for the power-off clock. The display will alert you of a dead battery. The GR-2 will still function when the CR1220 is dead. However, the internal power-off clock will not function.

(R) = Read mode. Reads SMPTE/EBU timecode at normal operating speeds. Displays timecode, user bits, and frame rate. The input timecode is re-shaped and sent to the output connectors.

(JI) = Jam Internal. Jams the generator from the internal time of day clock (TOD). The date is loaded into the user bits according to the Day\Month, Month\Day settings. The last two digits are loaded from memory (set in UB mode). This mode is useful after changing the TOD value setting (avoids having to restart the GR-2).

(JC) = Jam continuous. This will re-jam anytime there is a break in the clock of the input timecode. This is useful for re-stripping timecode on a dub if the frame rate needs changing. The jam is on the 00 frame so cross jamming of different rates can be accomplished. The input is active after the GR-2 is jammed. Sync between external timecode can be compared to the already jammed code.

(J) = Jam. Jam once when the set button is pushed. The jam is on the 00 frame so cross jamming of different rates can be accomplished. The input is active after the GR-2 is jammed. Sync between external timecode can be compared to the already jammed code.

(GU) = Can be used for live action recording with playback. Timecode is generated in the time portion of the timecode. The play back code is fed into the input. The external timecode is transferred into the user bits of the new timecode. There is a 1 to 2-frame delay in the play back code on the new timecode.

DELTA:

To view the difference (delta) in timecode, push the joystick LEFT. An equal, plus, or minus sign in the mode field indicate that there is a difference between the generated code and the incoming code. The offset displays with a remainder in hundredths of frames.

LAMP:

The lamp button turns the backlight on and off. Push the joystick UP, while in run mode, to turn the backlight on or off (backlight times out after 2 minutes). Holding the joystick in the UP position for 2 seconds will turn on the backlight continuously. The lamp is turned on continuously when external power is applied, but can be turned off via the joystick.

TC\UB:

Pushing the joystick RIGHT, while in run mode, will toggle the display between timecode and user bits

HOLD:

Pushing the joystick DOWN, while in run mode, will hold the timecode display. The timecode clock, and output do not stop while in hold mode. The hold points are NOT stored.

POWER:

The GR-2 uses two "AA" alkaline, lithium batteries, or external power up to 18V DC. An asterisk "*" is displayed when the GR-2 is running on external power. Low Battery (2.1V) will flash in the rate field when the main batteries are low. The timecode out will still be good for some time more, but it's time to change batteries. Dead Battery (2.0V) will flash in the rate field when the main batteries are dead. The batteries should be changed ASAP. The "AA" batteries can be installed with external power present and will change over from internal and external power seamlessly.

When the internal lithium battery is dead, the display will show "CR1220 is dead" at startup.