Murraypro TCR-300

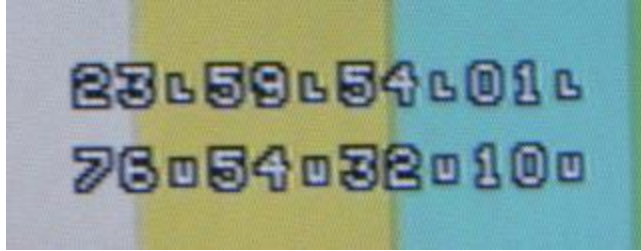## LTC and VITC

=BITC

TIME-CODE COMPARATOR

(option)

2 Row **B**urnt **I**n **T**ime **C**ode

Murraypro **TCR-300D** (Cat 237) Module reads both Longitudinal and Vertical Interval Timecode. Decoded LTC/VITC Time & User values are displayed on the front panel LED display, and inserted onto a video signal for subsequent recording or display on a TV monitor. Housed in a 1 U rack mount case.

LONGITUDINAL TIMECODE

TCR-300 card decodes LTC at any speed between 1/50 - 220x normal speed, subject to satisfactory quality of the recovered off tape code. The balanced input is high impedance, accepting levels between -12dBV.7 & +20 dB   The input may be used balanced or unbalanced, as required.

VERTICAL INTERVAL TIMECODE

TCR-300 automatically detects and decodes the first VITC data of the vertical interval, without any adjustment. Detected VITC lines are CRC verified before being decoded. An internal VITC decode adjustment can provide a measure of compensation for phase and amplitude errors on the input video signal.

AUTOMATIC CHANGE-OVER

Preserving low frame rate performance, **TCR-300** changes over automatically to VITC data when the LTC stream drops below 0.5 normal speed. This operation is inhibited if VITC is either absent or corrupt.

BURNT IN TIME CODE : TIME and/or USER Bits, with AUTO SIZING

TCR-300 inserts the decoded data into a standard video signal. White characters are surrounded with character-shaped black masks, maximizing visibility on all possible program material. The display may be positioned at the top or the bottom of the screen, and be muted as desired. Either a single row, or a dual row of characters, may be displayed on the screen. Selection is also possible between TIME or USER Bits only. Character height is automatically reduced when both rows are displayed simultaneously. With 525 signals, automatic compensation is applied to the vertical position of **BITC** screen characters, due to the shorter field.

LOCALLY GENERATED, (0-99) BITC NUMERIC IDENT

On the 1U rack mounted version, a thumbwheel switch generates a two character numeric identification string betwen 1 & 99, which may burnt in to the video to the *right* of the frames field. This is intended for **LOCALLY generated identification of material _AFTER_** the master has been recorded, for use during transfer to helical tape for example. Leading zero suppression is incorporated, and the video local identification characters do not affect the source LTC or VITC Timecode in any way.

TIMECODE COMPARATOR with GPIB

TCR-300 provides the decoding power for the optional 1U rack mounted Timecode Comparator, **TCR-300C** (Cat1019). A field-accurate GPIB relay closure occurs briefly at the specified Timecode value.

TCR-300 SPECIFICATION

INPUT: LTC   XLR-3, Hi Z balanced.   -12 to +20dBV.7
VIDEO: BNC, 1 Volt terminating
VITC: 600mV nominal
TV Standard: PAL & SECAM (CCIR), or NTSC
Xtal lock: CCIR stability sources only, ie unlocked Xtal on non-TBC VTR PB etc.
OUTPUT: Video   1 Volt, BNC 75ohms.
Freq resp: $\pm$0.1dB nominal, @ 6MHz
DP: 0.5' nominal max
DG: 0.5% nominal max
Characters: 700mV nominal
INSERTION: Nominal $\pm$0.1dB
POWER dc: 5V 300mA with display illuminated.
              5V 200mA display extinguished.
Timeout: Approximately 20 sec for LED auto display extinguish, battery operation only.
SPEED LTC: Min   1/50x play, with <u>coherent code</u>, typically 1/10 achievable on VTR rock & roll.
              Max   >220x play, with coherent code.
       VITC: 1X - still, with coherent code.   CRC validation required for update.
VITC position: Auto seeking, first valid packet.

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cutting cost, *not* corners