

3D LANC PRO commander for video cameras

INSTRUCTION MANUAL

3D LANC Pro Commander works with pairs of video cameras that have the 10-pin AV connector (any modern Sony video camera) or the standard 2.5 mm LANC socket (which now is used in several Sony and Canon video cameras).

LANC Commander takes power from the camera (so does not require an internal battery) and synchronizes the following functions of the cameras:

- **turns the power OFF and ON of video cameras** and displays (on the built-in LCD display) the time difference between frames of the cameras within one microsecond
- **ON-OFF record** on videotape, hard disk or other built-in memory or card
- **ZOOM (TELE and WIDE)**
- **Sets various ZOOM speeds (separately for TELE and WIDE),**
- **ON-OFF manual focus mode**
- **manual focus (FAR and NEAR)**
- **photo shooting** (simultaneously with video record or independently)
- **Power ON backlight of LCD** in two modes – *permanent* backlight or *temporary* backlight (resets by pressing any button).

1. OPERATING CONTROLS

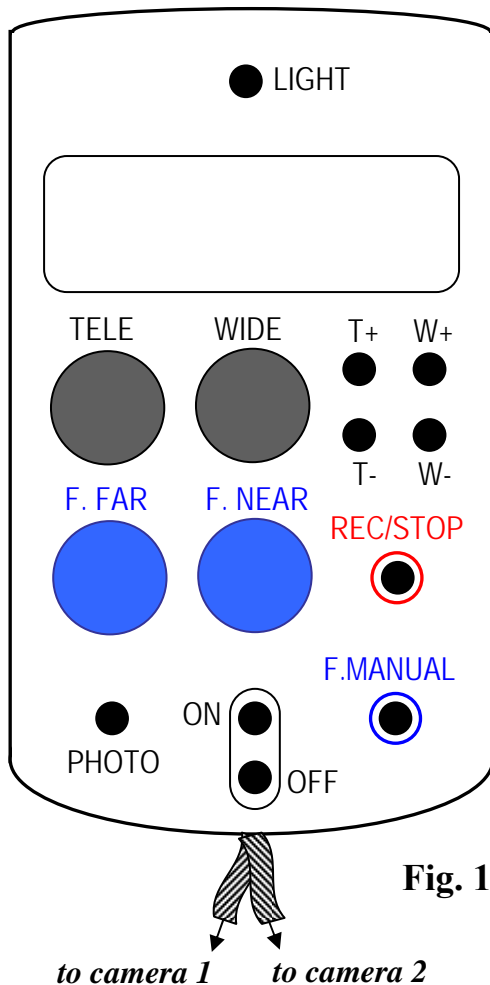


Fig. 1

LANC Commander contains 14 buttons, LCD display, and two cables for connection with LANC or AV port of each video camera (**Fig.1**).

PURPOSE OF BUTTONS

- buttons **ON - OFF** control power supply of cameras (*item 3.1 of the manual*),
- button **REC/STOP** provide switching ON-OFF video record (*item.3.2*),
- buttons **TELE - WIDE** provide zoom to telephoto and zoom to wide angle accordingly(*item 3.3*),
- buttons “**T+**“ - “**T-**“ set various speeds of **TELE** (*item 3.3*),
- buttons “**W+**“ - “**W-**“ set various speeds of **WIDE** (*item 3.3*),
- buttons **F. FAR - F. NEAR** – manually focus NEAR and FAR accordingly (*item 3.4*),
- button **F. MANUAL** provides switching ON-OFF of the manual focus mode (*item 3.4*),
- button **PHOTO** provides photo shooting (*item 3.5*),
- button **LIGHT** provides LCD backlight control (*item 3.6*).

2. INFORMATION DISPLAYED ON LCD SCREEN



uS	68			
a1	a2	a3	a4	
L R	TSWS	5.0	5.0	
a5	a6	a7	a8	a9

Fig. 2

LCD screen (Fig.2) has 9 areas a1-a9 with the following information:

- a1 – always indicates symbol uS, giving the unit of time measurement (microseconds) for the time offset displayed in area a2,
- a2 – current time offset between frames of two cameras (68 microseconds is displayed as an example),
- a3, a4 – dark rectangles are permanently displayed in case of video record status OFF and blink in case of video record status ON in each video camera,
- a5, a6 – empty areas corresponds to normal connection of LANC Commander with both video cameras, while presence of an L or R means that the Left or Right one is not connected.
- a7 – chosen combination of speeds of TELE and WIDE changes, TSWS combination is set by default (please, see item 3.3 and APPENDIX).
- a8, a9 – the supply voltage to LANC Commander (5.0 Volts from each video camera).

3. OPERATION

3.1 HOOKING UP THE LANC COMMANDER AND CUT-IN WITH CAMERAS

The batteries of both cameras should be fully charged. Both cameras should be switched OFF.

Order of hooking up LANC COMMANDER and cut-in:

- 1) Insert two connectors of two LANC Commander cords to corresponding connectors of two cameras.
- 2) Turn power supply ON of each camera by its own switch. (After this the screen of LANC Commander LCD begins to display information).
- 3) Press OFF button of LANC Commander. (In several seconds each camera goes to STANDBY mode; after this the information disappears from the screen of LANC Commander LCD).
- 4) Press ON button of LANC Commander. The power of each camera will be switched on, and the information appears on the screen of LANC Commander LCD according to Fig.2 (i.e., the absence of L or R symbols indicates successful connection of LANC Commander with both cameras).
- 5) It is necessary to check visually the time offset on LCD screen. (The typical value is 60-100 uS corresponding to time scan of several image lines). If the current value of time offset is too great, it is necessary to restart the cameras according to steps 3-5 as above.

The system is ready for operation.

3.2 VIDEO RECORD

Pressing the button REC/STOP on the LANC Commander begins synchronous video record by both cameras. At start of record the symbols in areas a3 and a4 begin to blink; the blinking continues during the record. A second pressing of the button REC/STOP stops record, and these symbols stop to blinking. If video cassette is absent in any video camera, corresponding symbol - rectangle is not appeared.

3.3 ZOOM (TELE, WIDE)

Pressing “big” button **TEL** zooms out. Pressing “big” button **WIDE** zooms in for wide angle.

Speeds of TELE and WIDE zooming are set by pressing “small” buttons (“T+“, “T-“) or (“W+“, “W-“) correspondingly. The values of speed are **S, 1, 2, 3, 4, 5, 6, 7, 8, F** with limits from **S** (slow) speed to **F** (fast) speed. The speeds are displayed by the symbol in area **a7**. Each press of buttons “T+“ or “W+“ increases by one unit the speed of TELE or WIDE zooming; each press of buttons “T-“ or “W-“ decreases the speed by one unit. In total 100 combinations of speeds are possible (**table 1** in APPENDIX).

3.4 MANUAL FOCUS

Pressing button **F. MANUAL** switches **on** the mode of manual focus in both video cameras. (one more pressing of this button switches **off** the mode). Pressing of «big» buttons **F. FAR** or **F. NEAR** proceeds to manual FOCUS FAR or FOCUS NEAR.

*After each restart of video cameras (with use of buttons **ON/OFF** of **LANC Commander**) the subsequent pressing of button **F. MANUAL** may be necessary to resume the manual focus mode (if the cameras do not store the manual focus mode after power supply is turned off).*

3.5 PHOTO SHOOTING

Pressing **PHOTO** button turns on photo shooting mode in both video cameras (during video recording or at startup) if there is a corresponding memory card in the cameras.

3.6 LCD BACKLIGHT CONTROL

By default the LCD backlight of the **LANC Commander** is switched off.

As noted above, the first pressing of the button **LIGHT** causes temporary mode of backlight: pressing any other button of **LANC Commander** resumes 7-second illumination of LCD screen background. A second pressing of the button **LIGHT** causes permanent (infinite time) mode of backlight activation.

A third pressing of the button **LIGHT** switches off the backlight.

The subsequent pressings of the button **LIGHT** cycle through the process again.

NOTES

- For equal change of parameters ZOOM or FOCUS it is necessary that the batteries of both video cameras are equally well charged.

- To set equal parameters of ZOOM or manual FOCUS of both video cameras it is necessary at first to press corresponding «big» buttons **TELE**, **WIDE** or **F. FAR** or **F. NEAR** up to the moment when the motor servo drives of the lenses of both cameras reach the boundary value (no further image changes in viewfinders of either camera). Then, it will be possible to go to any intermediate value of the indicated parameters by pressing corresponding «big» buttons with adequate accuracy. It is recommended to do this periodically because different cameras can have slightly different speeds of ZOOM and manual FOCUS change, even if they give absolutely equal control LANC signals to their ports.

- Avoid further pressing of «big» buttons **F. FAR** or **F. NEAR** when manual FOCUS is at the limit. Otherwise, mismatches between two cameras in manual FOCUS parameters may occur. To eliminate such possible mismatch, it is sufficient to press the «big» buttons which call the opposite process, i.e. to change the FOCUS parameter up to the opposite limit, provided you stop pressing soon after reaching this limit.

APPENDIX

Table 1. POSSIBLE SPEEDS OF T & W

W \ T	S	1	2	3	4	5	6	7	8	F
S	TSWS	T1WS	T2WS	T3WS	T4WS	T5WS	T6WS	T7WS	T8WS	TFWS
1	TSW1	T1W1	T2W1	T3W1	T4W1	T5W1	T6WS	T7W1	T8W1	TFW1
2	TSW2	T1W2	T2W2	T3W2	T4W2	T5W2	T6W2	T7W2	T8W2	TFW2
3	TSW3	T1W3	T2W3	T3W3	T4W3	T5W3	T6W3	T7W3	T8W3	TFW3
4	TSW4	T1W4	T2W4	T3W4	T4W4	T5W4	T6W4	T7W4	T8W4	TFW4
5	TSW5	T1W5	T2W5	T3W5	T4W5	T5W5	T6W5	T7W5	T8W5	TFW5
6	TSW6	T1W6	T2W6	T3W6	T4W6	T5W6	T6W6	T7W6	T8W6	TFW6
7	TSW7	T1W7	T2W7	T3W7	T4W7	T5W7	T6W7	T7W7	T8W7	TFW7
8	TSW8	T1W8	T2W8	T3W8	T4W8	T5W8	T6W8	T7W8	T8W8	TFW8
F	TSWF	T1WF	T2WF	T3WF	T4WF	T5WF	T6WF	T7WF	T8WF	TFWF

TSWS – Slowest speeds are set for TELE, WIDE

TFWF – Fastest speeds are set for TELE, WIDE

