

Readers and Inserters of the LTC(MTD)

AV-MTD I

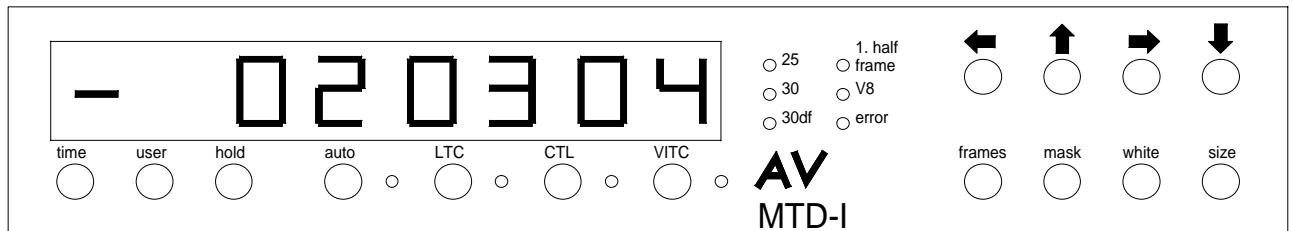


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A1 Safety Instructions

- General rules:** Only use the device as directed in a dry atmosphere. Treat the AV-MTD I with the same care as other studio devices. Please follow the advice in the following operators manual.
- Damages in transit:** If the device shows obvious damages from transit the shipper in question must be notified and the dealer must be informed.
- Positioning:** Position device only where sufficient air circulation can be maintained. Extreme temperatures, dust, humidity, shocks and strong electromagnetic fields must be avoided.
- Maintenance:** Use a moist soft textured fabric cloth when cleaning the housing. Do not use polish or any other cleaning agents.
- Repairs:** The AV-MTD I does not require any extra maintenance. There are no user serviceable parts inside the device. Repairs should be sent to an authorized service partner.
- EMC:** The EMC regulations are observed only under the following condition: use high quality shielded cables at data inputs and outputs.

A2 Copyright

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A3 CE Declaration of Conformity

We,

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herewith declare under our sole responsibility that the

AV-MTD I

meets the intent of the following directives, standards and specifications:

89/336/EEC Electromagnetic Compatibility

EN 50081-1 Emissions

- EN 55022
- EN 55103-1

EN 50082-1 Immunity

- EN 55024
- EN 55103-2

Functions Overview

The unit MTD I reads the linear time code (LTC) according to specification ANSI/SMPTE 12M-1995 for the television systems 525/60 (NTSC) and 625/50 (PAL). Additionally it decodes the LTC(MTD).

Alpermann + Velte has developed a system for Multiple Time Displays (MTD). A MTD system consists of a central generator unit, video inserters, digital displays and/or analogue clocks, and user console(s). The central generator unit outputs a special LTC format. This LTC will henceforth denoted as LTC(MTD). The LTC(MTD) represents the data link to all the LTC(MTD) readers (inserters, digital displays), and it contains real time, date and user selectable timers.

MTD I accepts LTC frame rates of 24, 25, 30 and 30 drop. The frame rate will be detected automatically and indicated. This automatic mode can be switched off.

The readout data can be visible inserted in a CVBS video signal. The television system 525/60 (NTSC) or 625/50 (PAL) will be detected automatically. This automatic mode can be switched off. The insertion window may be positioned all over the entire screen. Two different character sizes are selectable.

Main application of the unit MTD I is to visible insert the decoded data of the LTC(MTD). All data units (real time, date, stop timers ...) can be seen at the video window at same time or alone. All units will be displayed or inserted in a 6-digit format (hours:minutes:seconds or day/month/year). MTD I can be switched to either read LTC(MTD) or just LTC. In the LTC reader mode the time and user data can be displayed in a 8-digit format.

The read data are also displayed at the front display (LEDs of 15mm digits height). The front panel keys permit modification of the insertion. All adjustments are stored and will be available again after power-on. As long as a new adjustment is stored, the display indicates „**store**“ and no operation will be permitted. Four additional pre-sets can be stored and loaded.

The following options are available:

- Option “Extern Bypass”: the insertion may be switched on/off via external switch. A key instead a switch can be used as well, in this case it is recommended to use a tally signal to connect a LED with the key.
- Option “Load Pre-Sets with External Keys”: four keys can be connected at the rear to load the pre-sets 1...4. Upon request tally signals output can be used to control LED's with the keys.
- More options upon request.

Front Panel Display

After power-on the unit will execute a storage test.

In case of an error all settings will be reset and the display will indicate „**RESET..**“. The four pre-sets as well will be reset to a standard setting.

After reset or after successful completion of the storage test, the revision number is displayed, e.g.:

MTD - - - 4 6.

In case a special firmware or any option is installed the display shows e.g.:

MTD o 1 - 4 6.

After that the current operating mode will be displayed, i.e. the time actually displayed or to be adjusted for the insertion, e.g.:

MODE A.

LTC(MTD) reader mode:

With the display set to **time**, the time selected will be displayed in a 6-digit format (except LTC user = 8-digit) - only if new values can be read. The display flashes showing „**ErrLTC**“ if no LTC(MTD) can be read.

A minus sign is indicated at the left side of the display.

LTC reader mode:

With the display set to **time**, the time or user data will be displayed in a 8-digit format.

Pressing key **user** the display switches to show the operating mode. See chapter “Operating Mode and Selection of Timers”.

Operating Mode and Selection of Timers

Real time, date, stop timers etc. may be decoded out of the LTC(MTD). Each unit can be switched to be displayed at the front display and can be visible inserted in a video window. To do the adjustments for each unit the corresponding operating mode has to be selected. MTD I can be switched to LTC reader function (instead of LTC(MTD)), in this mode LTC time and LTC user can be displayed and inserted only.

Press key **user** to enable the mode selection, display shows the current mode. Using key **hold** other modes can be selected. At mode = 6 the MTD I can be switched to the following functions using key **mask**:

- LTC(MTD): insertion of LTC time with identifying letter "T".
- LTC(MTD): insertion of LTC time without identifying letter.
- LTC reader: insertion of LTC time as hours:minutes:seconds:frames.
- LTC reader: insertion of LTC time as hours:minutes:seconds.

Having selected the LTC reader function, only modes = 0, = 6 and = 7 can be selected.

<u>Operating mode</u>	<u>Display (time)</u>	<u>Insertion</u>	
0 = store and load pre-sets, enables the load by external keys, enables to change the automatic modes			
1 = 1 st main time: display of one of the timers of modes A, B, C, D, E, F, 2, 3			(*2)
2 = real time (time H)	12 59 59	12 . 59 . 59H	(*1)
3 = date (time I)	14 07 94	14 . 07 . 94I	(*1)
6 = LTC time: LTC(MTD)	12 59 59	12 59 59T	(*1)
6 = LTC time: LTC reader	12 59 59 23	12 : 59 : 59 : 23	
7 = LTC user	12 34 56 78	12345678	
8 = 2 nd main time: display of one of the timers of modes A, B, C, D, E, F, 2, 3			(*2)
9 = 3 rd main time: display of one of the timers of modes A, B, C, D, E, F, 2, 3			(*2)
A = time A (stop timer..)	00 08 16	8 : 16A	(*1)
B = time B (stop timer..)	00 28 59	28 : 59B	(*1)
C = time C (stop timer..)	01 08 16	1 : 08 : 16C	(*1)
D = time D (stop timer..)	23 59 59	23 : 59 : 59D	(*1)
E = time E (stop timer..)	-00 00 06	- 6	(*1)
F = time F (VTR LTC)	01 08 16	10 08 16	(*1)

*1: The insertion format, such as 'colons', 'decimal points', 'leading zeros' and 'minus sign', are enabled/disabled by status bits of the LTC(MTD). Operation is made using any operational unit of the MTD system.

*2: Main time: The information which time should be indicated is encoded in the status bits of the LTC(MTD). Operation is made using the keys of an „operational display“ or any operational unit of the MTD system. One out of the following times/modes can be selected to be displayed: time A, time B, time C, time D, time E, time F, real time (time H), date (time I). The insertion of one identifying letter may be switched on to indicate which time currently is selected. The front display indicates in the **user** mode this identifying letter as well, e.g. displaying "**Mode 1 A**".

The Video Insertion

For each unit, decoded out of the LTC(MTD), 10 digits are reserved to be inserted, e.g.:

-12:13:14A.

Each unit is marked by an identifying letter: **A, B, C, D, E** for the stop timer/difference/offset times, **F** for the VTR LTC (read by the generator of the LTC(MTD)), **H** for the real time, **I** for the date, **T** for LTC time, **U** for LTC user.

It is possible to display 20 characters each line, i.e. two times may be placed adjacent. 8 (neighbouring) lines are available. Every unit may be positioned individually within this area of 20 digits x 8 lines. The whole insertion field may also be finely shifted on the screen towards all directions, i.e. also to the upper or lower edge (but with the small size selected not one unit at the upper and one unit at the lower edge at one time!).

- Please note: units may overlap!
- Please note: the units A, B, C, D, E, F can be switched on/off by use of the MTD shut-off feature (see MTD Operating Manual: "Deactivate the Displays" by the STOP+RESET buttons). During shut-off the insertion of the time of this unit is switched off as well.

With the LTC reader function only LTC time and LTC user can be inserted. Both the units can be adjusted same way as the units of the LTC(MTD). The LTC time is inserted with 11 characters (insertion of frames) or 8 characters (no insertion of frames), LTC user is inserted with 8 characters.

Adjustments having switched the display to show the time (key **time**):

mask	Changes the format of the entire insertion: background mask/character border off - background on - character border on.
white	Changes the brightness of the inserted characters (5 steps).
white+mask	Pressing both keys simultaneously: changes the brightness of the background mask/ character border (4 steps).
size	Modifies the size of the insertion (2 steps).
← ↑ → ↓	Shifts the insertion field as a whole.

Adjustments having switched the display to show the mode (key **user**):

auto	Positions the selected unit at the top line left-justified. Please note: units may overlap!
frames	Switches on/off the insertion of the selected unit.
mask	Switches on/off the identifying letter of the selected unit. Having selected mode (unit) = 6: switches between LTC(MTD) reader and LTC reader mode, see chapter "Operating Mode and Selection of Timers".
← ↑ → ↓	Modifies the position of the selected unit within the field of 20 characters x 8 lines.

LEDs and Keys Overview

LEDs:

25 30 30df	Indicates the current frame rate. Frame rate = 24 if no LED lights up.
LTC	Lights up as long as LTC can be read.
error	Flashes shortly in case of reader errors (function LTC reader only).

Keys:

time	Switches the display to time indication.
user	Switches the display to mode indication and permits a mode change.
hold	Switches to the next operating mode, if display shows mode (key user).
auto	Display shows mode (key user): positions the selected unit at the top line left-justified. Please note: units may overlap! Function at mode = 0 : see chapter "Save and Load....". Long keystroke (hold for approx. 3 seconds): resets the system, <u>all</u> settings are cancelled, display indicates „RESET..“.
CTL	Bypass on/off: the entire insertion window can be switched on/off. The LED at this key lights up = bypass, insertion switched off. Long keystroke (hold for approx. 3 seconds): sets all units to a standard position of the insertion and switches all units on. The LTC(MTD) reader is selected.
VITC	Long keystroke (hold for approx. 3 seconds): sets all units to a standard position of the insertion, but switches all units off. The LTC(MTD) reader is selected.
frames	Display shows mode (key user): switches on/off the insertion of the selected unit.
mask	Display shows time (key time): changes the format of the entire insertion: background mask/character border off - background on - character border on. Display shows mode (key user): switches on/off the identifying letter of the selected unit. Having selected mode (unit) = 6: switches between LTC(MTD) reader and LTC reader mode, see chapter "Operating Mode and Selection of Timers".
white	Changes the brightness of the inserted characters (5 steps).
white + mask	Pressing both keys simultaneously: changes the brightness of the background mask/ character border (4 steps).
size	Modifies the size of the insertion (2 steps).
← ↑ → ↓	Display shows time (key time): shifts the insertion field as a whole. Display shows mode (key user): modifies the position of the selected unit within the field of 20 characters x 8 lines. Function at mode = 0 : see chapter "Save and Load....".

Save and Load Pre-Sets, Select Automatic Modes

The operating mode **0** enables to save and load four different pre-sets and to change the automatic operation modes.

Having pressed the '**time**' key, the display shows:

0 - - - - 1	The "0" indicates the operating mode 0. The last call of a sub-menu was to load or store a pre-set. The "1" (or "2" or "3" or "4") indicates the number of the last loaded or stored pre-set.
0 - - - - A	The "0" indicates the operating mode 0. The last call of a sub-menu was to change the automatic operating modes.

Having pressed the '**user**' key, the display shows the selected sub-menu:

0 EKEY 1	Enables to load a pre-set by external keys (optional).
0 LOAD 1	Enables to load a pre-set.
0 SAVE 1	Enables to store a pre-set.
on/525/625 on/24/25/30	Enables to change the automatic operating modes.

Having pressed the '**user**' key, the arrows keys '← ↑ → ↓' and the '**auto**' key execute the following functions:

← →	Selection of the sub-menu EKEY - LOAD - SAVE - on.../on... .
↑ ↓	Selection of the pre-set number 1...4 or selection of automatic modes on/off.
auto	Activates the load or save procedure; stores the changes at automatic modes.

Example: "Save pre-set 3":

- Choose all settings to your desired configuration.
- Having pressed the '**user**' key: press the '**hold**' key to select operating mode 0.
- Press the '→' or '←' key to select **SAVE**.
- Press '↑' or '↓' key to select the number 3.
- Press the '**auto**' key to save the current settings as pre-set 3.

Example: "Load pre-set 3":

- Having pressed the '**user**' key: press the '**hold**' key to select operating mode 0.
- Press the '→' or '←' key to select **LOAD**.
- Press '↑' or '↓' key to select the number 3.
- Press the '**auto**' key to load pre-set 3.

Example: "Change automatic mode":

- Having pressed the 'user' key: press the 'hold' key to select operating mode 0.
- Press the '→' or '←' key to select **on (525/625) on (24/25/30)**.
- Press '↑' to change the automatic detection of the television system: **on** = automatic, **525** = fixed to 525/60 (NTSC), **625** = fixed to 625/50 (PAL).
- Press '↓' to change the automatic detection of the frame rate: **on** = automatic, **24** = fixed to 24 frames/sec., **25** = fixed to 25 frames/sec., **30** = fixed to 30 frames/sec. (with automatic selection of drop/non drop).
- Press the 'auto' key to store the new selection.

Option: "Load Pre-Sets with External Keys"

A 9 pin DSUB female connector (see "Rear Panel ...") provides to connect four keys.

The functions of the external keys are enabled only if at MTD-I the submenu **EKEY** at operating mode **0** is selected.

A key stroke executes an automatic load of the appropriate pre-set. If built-in tally signals indicate which key has been pressed last. The tally signals can be used to control LED's with the keys.

Option „Extern Bypass“: Switch Insertion On/Off with External Key

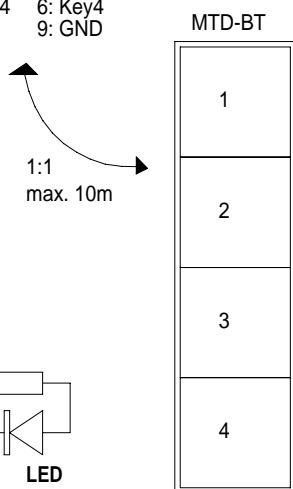
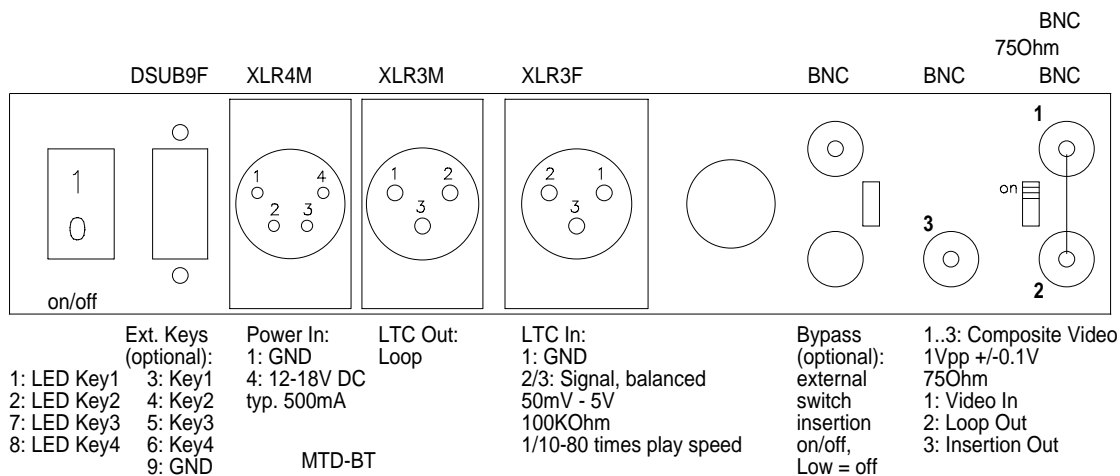
The entire insertion may be switched off via remote control. A BNC socket at the rear panel serves to connect this switch.

Open switch: insertion = "on".

Switch closed (i.e. signal shorted with GND): insertion "off". In this case no modification of the insertion, such as size, position... can be made.

Upon request a key instead a switch can be used. Each stroke of the external key will change from "on" to "off" to "on" ... A tally signal can be used to control a LED which indicates "on" or "off". A 9-pins DSUB female serves to connect the signals (KEY1, LED KEY1).

Rear Panel and Technical Data



Dimensions: 214 (W) x 43 (H) x 267 (D) mm
 Weight: 1.5 kg approx.
 Operating temperature: 5°C to 40°C
 Humidity of air: 35% to 85%